

Obtained by UndeadFOIA

From: (b)(6)
To:
Cc:
Subject: Clearances
Date: Thursday, October 31, 2019 10:54:06 AM

(b)(6)

Can you please send mine and (b)(6) clearances (TS/SCI) to the following facility for a meeting on 13 November:

ISSO Security Office
10530 Riverview Road
Fort Washington, MD 20744
Security (Albert J. Smokes, 301-203-2630 / C. Williams, 301-203-2672)
FAX: 301-203-4750 / 2700

Tech POC: Maxwell Potasznic
Phone: 301-203-7331
SMO code: 39998

Thank you!

V/r,

(b)(6)
(b)(6) (office)
(b)(6) (cell)

(b)(6)

Subject: Constellation/Orion Contracting Questions
Location: 675 09-400 Medium Conference Room (TS/SCI/SAR)

Start: Tue 6/7/2022 3:00 PM
End: Tue 6/7/2022 3:30 PM
Show Time As: Tentative

Recurrence: (none)

Organizer: (b)(6)
Required Attendees: (b)(6) Ulrey, Scott

Resources: 675 09-400 Medium Conference Room (TS/SCI/SAR)

(b)(6)

From: (b)(6)
Sent: Tuesday, June 7, 2022 8:33 AM
To: (b)(6)
Cc: (b)(6) Ulrey, Scott
Subject: RE: Keymaster - 90COS
Signed By: (b)(6)@darpa.mil

Hi (b)(6)

Sounds good.

v/r

(b)(6)

DARPA Contracts Management Office
Phone: (b)(6)
Mobile: (b)(6)
Email: (b)(6)@darpa.mil

-----Original Message-----

From: (b)(6)@darpa.mil>
Sent: Tuesday, June 7, 2022 8:32 AM
To: (b)(6)@darpa.mil>
Cc: (b)(6)@darpa.mil>; (b)(6)@darpa.mil>; (b)(6)@darpa.mil>; (b)(6)@darpa.mil>; Ulrey, Scott <Scott.Ulrey@darpa.mil>
Subject: Re: Keymaster - 90COS

(b)(6)

I'll be back in the office and available from 1430-1730. Any time then works. How about 1500-1530?

Regards,

(b)(6)

On 6/7/22, 8:26 AM, (b)(6)@darpa.mil> wrote:

Hi (b)(6)

I am coming into the office to review a classified J&A from 10:30-11:30 and then I have a quick conference call from 11:30-12:00. We could meet and discuss any time after that.

v/r

(b)(6)

DARPA Contracts Management Office
Phone: (b)(6)

Mobile: (b)(6)
Email: (b)(6)@darpa.mil

-----Original Message-----

From: (b)(6)@darpa.mil>
Sent: Tuesday, June 7, 2022 8:09 AM
To: (b)(6)@darpa.mil>; (b)(6)@darpa.mil>
Cc: (b)(6)@darpa.mil>; (b)(6)@darpa.mil>; (b)(6)@darpa.mil>; (b)(6)@darpa.mil>
Subject: Re: Keymaster - 90COS

(b)(6)

(b)(5)

Regards,

(b)(6)

On 6/7/22, 7:59 AM, (b)(6)@darpa.mil> wrote:

Hi (b)(6)

(b)(5), (b)(6)

v/r

(b)(6)

DARPA Contracts Management Office

Phone: (b)(6)

Mobile:

Email: (b)(6)@darpa.mil

-----Original Message-----

From: (b)(6)@darpa.mil>
Sent: Tuesday, June 7, 2022 7:52 AM
To: (b)(6)@darpa.mil>; (b)(6)@darpa.mil>
Cc: (b)(6)@darpa.mil>
Subject: Re: Keymaster - 90COS

(b)(6)

(b)(5)

Regards,

(b)(6)

On 6/2/22, 11:48 AM, (b)(6)@darpa.mil> wrote:

Hi (b)(6)

(b)(5), (b)(6)

v/r

(b)(6)

DARPA Contracts Management Office

Phone: (b)(6)

Mobile:

Email: (b)(6)@darpa.mil

-----Original Message-----

From: (b)(6)@darpa.mil>

Sent: Thursday, June 2, 2022 9:54 AM

To: (b)(6)@darpa.mil>

Cc: (b)(6)@darpa.mil>; (b)(6)@darpa.mil>

Subject: Re: Keymaster - 90COS

(b)(6)

Thanks!

(b)(6)

(b)(5)

Regards,

(b)(6)

On 6/2/22, 9:49 AM, (b)(6)@darpa.mil> wrote:

(b)(6)

(b)(5)

Thanks,

(b)(6)

(b)(6)

Defense Advanced Research Projects Agency

Comptroller Office

Voice: (b)(6)

Cell: (b)(6)

DSN: (b)(6)

Fax: (b)(6)

-----Original Message-----

From: (b)(6)@darpa.mil>

Sent: Thursday, June 2, 2022 9:28 AM

To: (b)(6)@darpa.mil>

Cc: (b)(6)@darpa.mil>, (b)(6)

(b)(6)@darpa.mil>

Subject: FW: Keymaster - 90COS

(b)(6)

(b)(5), (b)(6)

Regards,

(b)(6)

Information Innovation Office

Defense Advanced Research Projects Agency NIPR Email: (b)(6)@darpa.mil JWICS Email:

(b)(6)@darpa.ic.gov

work: (b)(6)

mobile: (b)(6)

fax: (b)(6)

On 6/1/22, 4:14 PM, "Ulrey, Scott" <Scott.Ulrey@darpa.mil> wrote:

(b)(6)

I'm not familiar with that number. Check with COMP?

Scott

-----Original Message-----

From: (b)(6)@darpa.mil>

Sent: Wednesday, June 1, 2022 3:54 PM

To: (b)(6)@darpa.mil>; Ulrey, Scott <Scott.Ulrey@darpa.mil>

Subject: FW: Keymaster - 90COS

(b)(6) Scott:

(b)(5)

(b)(5), (b)(6)

Regards,

(b)(6)

From: (b)(6) GG-14 USAF ACC 90 COS/DD <(b)(6)@us.af.mil>
Sent: Thursday, May 26, 2022 7:02 PM
To: (b)(6)@darpa.mil
Cc: (b)(6) TSgt USAF ACC 90 COS/CYT <(b)(6)@us.af.mil>; (b)(6) 2d Lt USAF ACC 90 COS/CYK <(b)(6)@us.af.mil>; (b)(6) GG-13 USAF ACC 90 COS/CYT <(b)(6)@us.af.mil>
Subject: RE: Keymaster - 90COS

(b)(5)

From: (b)(6)@darpa.mil
<mailto:(b)(6)@darpa.mil>

Date: Thursday, May 26, 2022, 1:28 PM

To: (b)(6) GG-14 USAF ACC 90 COS/DD <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil>

Cc: (b)(6) TSgt USAF ACC 90 COS/CYT <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil>, (b)(6) 2d Lt USAF ACC 90 COS/CYK <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil>, (b)(6) GG-13 USAF ACC 90 COS/CYT <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil>

Subject: RE: Keymaster - 90COS

(b)(6)

Update from our contracting management office FYSA:

[Redacted] (b)(5)

V/r,

[Redacted] (b)(6)

[Redacted] (b)(6)

[Redacted] (b)(6) @darpa.mil <mailto:[Redacted] (b)(6) @darpa.mil>
[Redacted] (b)(6) @darpa.ic.gov <mailto:[Redacted] (b)(6) @darpa.ic.gov>

[Redacted] (b)(6) (office)
[Redacted] (b)(6) (cell)

From: [Redacted] (b)(6) GG-14 USAF ACC 90 COS/DD <[Redacted] (b)(6) @us.af.mil>
<mailto:[Redacted] (b)(6) @us.af.mil> >
Sent: Tuesday, May 17, 2022 11:26 AM
To: [Redacted] (b)(6) @darpa.mil
<mailto:[Redacted] (b)(6) @darpa.mil> >
Cc: [Redacted] (b)(6) TSgt USAF ACC 90 COS/CYT <[Redacted] (b)(6) @us.af.mil>
<mailto:[Redacted] (b)(6) @us.af.mil> > [Redacted] (b)(6) 2d Lt USAF ACC 90 COS/CYK <[Redacted] (b)(6) @us.af.mil>
<mailto:[Redacted] (b)(6) @us.af.mil> >; [Redacted] (b)(6) GG-13 USAF ACC 90 COS/CYT <[Redacted] (b)(6) @us.af.mil>
<mailto:[Redacted] (b)(6) @us.af.mil> >
Subject: RE: Keymaster - 90COS

[Redacted] (b)(6)

[Redacted] (b)(5)

V/r,

(b)(6) Civ, DAF

Deputy Director

90th Cyberspace Operations Squadron

From: (b)(6)@darpa.mil
 <mailto:(b)(6)@darpa.mil>
 Sent: Monday, May 16, 2022 2:57 PM
 To: (b)(6) GG-14 USAF ACC 90 COS/DD (b)(6)@us.af.mil
 <mailto:(b)(6)@us.af.mil>
 Cc: (b)(6) TSgt USAF ACC 90 COS/CYT (b)(6)@us.af.mil
 <mailto:(b)(6)@us.af.mil>; (b)(6) 2d Lt USAF ACC 90 COS/CYK (b)(6)@us.af.mil
 <mailto:(b)(6)@us.af.mil>; (b)(6) GG-13 USAF ACC 90 COS/CYT (b)(6)@us.af.mil
 <mailto:(b)(6)@us.af.mil>
 Subject: RE: Keymaster - 90COS

(b)(6)

(b)(5)

V/r,

(b)(6)

(b)(6)

(b)(6) (office)
(b)(6) (cell)

(b)(6) (NSTS)

From: (b)(6) GG-14 USAF ACC 90 COS/DD (b)(6)@us.af.mil
 <mailto:(b)(6)@us.af.mil>

Obtained by UndeadFOIA

Sent: Monday, May 16, 2022 3:48 PM

To: (b)(6)@darpa.mil
<mailto:(b)(6)@darpa.mil> >
Cc: (b)(6) TSgt USAF ACC 90 COS/CYT <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >; (b)(6) 2d Lt USAF ACC 90 COS/CYK <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >; (b)(6) GG-13 USAF ACC 90 COS/CYT <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >
Subject: RE: Keymaster - 90COS

(b)(5)

V/r,

(b)(6) Civ, DAF

Deputy Director

90th Cyberspace Operations Squadron

From: (b)(6)@darpa.mil
<mailto:(b)(6)@darpa.mil> >
Sent: Monday, May 16, 2022 2:37 PM
To: (b)(6) GG-14 USAF ACC 90 COS/DD <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >
Cc: (b)(6) TSgt USAF ACC 90 COS/CYT <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >; (b)(6) 2d Lt USAF ACC 90 COS/CYK <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >; (b)(6) GG-13 USAF ACC 90 COS/CYT <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >
Subject: RE: Keymaster - 90COS

(b)(6)

(b)(5)

V/r,

(b)(6)

(b)(6)

(b)(6) (office)
(b)(6) (cell)

(b)(6) (NSTS)

From: (b)(6) GG-14 USAF ACC 90 COS/DD (b)(6) @us.af.mil
 <mailto:(b)(6)@us.af.mil> >
 Sent: Friday, May 13, 2022 6:13 PM
 To: (b)(6) @darpa.mil
 <mailto:(b)(6)@darpa.mil> >
 Cc: (b)(6) TSgt USAF ACC 90 COS/CYT (b)(6) @us.af.mil
 <mailto:(b)(6)@us.af.mil> >; (b)(6) 2d Lt USAF ACC 90 COS/CYK (b)(6) @us.af.mil
 <mailto:(b)(6)@us.af.mil> >; (b)(6) GG-13 USAF ACC 90 COS/CYT (b)(6) @us.af.mil
 <mailto:(b)(6)@us.af.mil> >
 Subject: RE: Keymaster - 90COS

(b)(6)

Thanks! Looking forward to it.

V/r,

(b)(6) Civ, DAF

Deputy Director

90th Cyberspace Operations Squadron

From: (b)(6) @darpa.mil
 <mailto:(b)(6)@darpa.mil> >

Obtained by UndeadFOIA

Sent: Thursday, May 12, 2022 6:24 AM

To: (b)(6) GG-14 USAF ACC 90 COS/DD <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >
Cc: (b)(6) TSgt USAF ACC 90 COS/CYT <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >; (b)(6) 2d Lt USAF ACC 90 COS/CYK <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >; (b)(6) GG-13 USAF ACC 90 COS/CYT <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >
Subject: Re: Keymaster - 90COS

(b)(6)

Yes, the base contact is expected to be awarded soon. I will get an estimated timeline today from the team and give you an update.

V/r,

(b)(6)

On May 11, 2022, at 5:57 PM, (b)(6) GG-14 USAF ACC 90 COS/DD
<(b)(6)@us.af.mil <mailto:(b)(6)@us.af.mil> > wrote:

Any chance we've made any progress on this? I think we'll have money soon but will we have somewhere to send it?

V/r,

(b)(6) Civ, DAF

Deputy Director

90th Cyberspace Operations Squadron

From: (b)(6) GG-14 USAF ACC 90 COS/DD
Sent: Thursday, March 24, 2022 9:28 AM

Obtained by UndeadFOIA

To: (b)(6)@darpa.mil
<mailto:(b)(6)@darpa.mil>; (b)(6) GG-13 USAF ACC 90 COS/CYK
<(b)(6)@us.af.mil <mailto:(b)(6)@us.af.mil>>; (b)(6) TSgt USAF ACC 90 COS/CYT
<(b)(6)@us.af.mil <mailto:(b)(6)@us.af.mil>>; (b)(6) 2d Lt USAF ACC 90 COS/CYK
<(b)(6)@us.af.mil <mailto:(b)(6)@us.af.mil>>; (b)(6) GG-13 USAF ACC 90 COS/CYT
<(b)(6)@us.af.mil <mailto:(b)(6)@us.af.mil>>
Subject: RE: Keymaster - 90COS

If a 3-star equivalent is signing at DARPA, we will likely need to go to the 16 AF/CC for signature.

V/r,

(b)(6) Civ, DAF

Deputy Director

90th Cyberspace Operations Squadron

From: (b)(6)@darpa.mil
<mailto:(b)(6)@darpa.mil>
Sent: Thursday, March 24, 2022 9:25 AM
To: (b)(6) GG-14 USAF ACC 90 COS/DD <(b)(6)@us.af.mil
<mailto:(b)(6)@us.af.mil>>; (b)(6) GG-13 USAF ACC 90 COS/CYK <(b)(6)@us.af.mil
<mailto:(b)(6)@us.af.mil>>; (b)(6) TSgt USAF ACC 90 COS/CYT <(b)(6)@us.af.mil
<mailto:(b)(6)@us.af.mil>>; (b)(6) 2d Lt USAF ACC 90 COS/CYK <(b)(6)@us.af.mil
<mailto:(b)(6)@us.af.mil>>; (b)(6) GG-13 USAF ACC 90 COS/CYT <(b)(6)@us.af.mil
<mailto:(b)(6)@us.af.mil>>
Subject: RE: Keymaster - 90COS

(b)(6)

That's great, who do you think will sign on your end? Do we need to elevate this to someone at 16AF?

No need to staff this at this point. Currently, we are working through our processes to get Constellation approved. We should have direction from our leadership in the next few weeks. At that point, we can start the staffing process.

V/r,

(b)(6)

(b)(6)

(b)(6) (office)
(b)(6) (cell)

(b)(6) (NSTS)

From: (b)(6) GG-14 USAF ACC 90 COS/DD (b)(6)@us.af.mil
 <mailto:(b)(6)@us.af.mil> >
 Sent: Thursday, March 24, 2022 10:18 AM
 To: (b)(6)@darpa.mil
 <mailto:(b)(6)@darpa.mil> >; (b)(6) GG-13 USAF ACC 90 COS/CYK
 (b)(6)@us.af.mil <mailto:(b)(6)@us.af.mil> >; (b)(6) TSgt USAF ACC 90 COS/CYT
 (b)(6)@us.af.mil <mailto:(b)(6)@us.af.mil> >; (b)(6) 2d Lt USAF ACC 90 COS/CYK
 (b)(6)@us.af.mil <mailto:(b)(6)@us.af.mil> >; (b)(6) GG-13 USAF ACC 90 COS/CYT
 (b)(6)@us.af.mil <mailto:(b)(6)@us.af.mil> >
 Subject: RE: Keymaster - 90COS

Based on this convo, I'm comfortable proceeding with this as written.

V/r,

(b)(6) Civ, DAF

Deputy Director

90th Cyberspace Operations Squadron

From: (b)(6)@darpa.mil
 <mailto:(b)(6)@darpa.mil> >
 Sent: Thursday, March 24, 2022 8:26 AM
 To: (b)(6) GG-13 USAF ACC 90 COS/CYK (b)(6)@us.af.mil
 <mailto:(b)(6)@us.af.mil> >; (b)(6) GG-14 USAF ACC 90 COS/DD (b)(6)@us.af.mil
 <mailto:(b)(6)@us.af.mil> >; (b)(6) TSgt USAF ACC 90 COS/CYT (b)(6)@us.af.mil

Obtained by UndeadFOIA

<mailto:(b)(6)@us.af.mil> >; (b)(6) 2d Lt USAF ACC 90 COS/CYK <(b)(6)@us.af.mil
<mailto:(b)(6)@us.af.mil> >; (b)(6) GG-13 USAF ACC 90 COS/CYT <(b)(6)@us.af.mil
<mailto:(b)(6)@us.af.mil> >
Subject: RE: Keymaster - 90COS

(b)(6) [redacted]

[redacted] (b)(5)

[redacted] (b)(5)

V/r,

(b)(6)

(b)(6)

(b)(6) (office)
(b)(6) (cell)

(b)(6) (NSTS)

From: (b)(6) GG-13 USAF ACC 90 COS/CYK <(b)(6)@us.af.mil
<mailto:(b)(6)@us.af.mil> >
Sent: Thursday, March 24, 2022 9:17 AM
To: (b)(6) GG-14 USAF ACC 90 COS/DD <(b)(6)@us.af.mil
<mailto:(b)(6)@us.af.mil> >; (b)(6) TSgt USAF ACC 90 COS/CYT <(b)(6)@us.af.mil
<mailto:(b)(6)@us.af.mil> >; (b)(6) 2d Lt USAF ACC 90 COS/CYK <(b)(6)@us.af.mil
<mailto:(b)(6)@us.af.mil> >; (b)(6) GG-13 USAF ACC 90 COS/CYT <(b)(6)@us.af.mil
<mailto:(b)(6)@us.af.mil> >
Cc: (b)(6)@darpa.mil
<mailto:(b)(6)@darpa.mil> >
Subject: RE: Keymaster - 90COS

Sorry for the delay, I thought I replied, but don't see it in sent.

[Redacted] (b)(5)

[Redacted] (b)(5)

[Redacted] (b)(5)

(b)(6)
Senior Cyber Capability Developer
90 COS / CYK Weapons and Tactics
Comm: (b)(6)

From: (b)(6) GG-14 USAF ACC 90 COS/DD <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >
Sent: Wednesday, March 23, 2022 11:16 AM
To: (b)(6) GG-13 USAF ACC 90 COS/CYK <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >; (b)(6) TSgt USAF ACC 90 COS/CYT <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >; (b)(6) 2d Lt USAF ACC 90 COS/CYK <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >; (b)(6) GG-13 USAF ACC 90 COS/CYT <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >
Cc: (b)(6)@darpa.mil
<mailto:(b)(6)@darpa.mil> >
Subject: RE: Keymaster - 90COS

Team,

Did y'all have a chance to look at this?

V/r,

(b)(6) Civ, DAF

Deputy Director

90th Cyberspace Operations Squadron

From: (b)(6) GG-14 USAF ACC 90 COS/DD

Sent: Friday, March 11, 2022 11:31 AM

To: (b)(6) GG-13 USAF ACC 90 COS/CYK <(b)(6)@us.af.mil

<mailto:(b)(6)@us.af.mil>; (b)(6) TSgt USAF ACC 90 COS/CYT <(b)(6)@us.af.mil

<mailto:(b)(6)@us.af.mil>; (b)(6) 2d Lt USAF ACC 90 COS/CYK <(b)(6)@us.af.mil

<mailto:(b)(6)@us.af.mil>; (b)(6) GG-13 USAF ACC 90 COS/CYK <(b)(6)@us.af.mil

<mailto:(b)(6)@us.af.mil>; (b)(6) GG-13 USAF ACC 90 COS/CYK <(b)(6)@us.af.mil

<mailto:(b)(6)@us.af.mil>

Subject: FW: Keymaster - 90COS

Can y'all take a first stab at any edits to make sure it says what you think it should say?

V/r,

(b)(6) Civ, DAF

Deputy Director

90th Cyberspace Operations Squadron

From: (b)(6)@darpa.mil

<mailto:(b)(6)@darpa.mil>

Sent: Friday, March 11, 2022 10:26 AM

To: (b)(6) GG-14 USAF ACC 90 COS/DD <(b)(6)@us.af.mil

<mailto:(b)(6)@us.af.mil>; (b)(6)@darpa.mil <mailto:(b)(6)@darpa.mil>

Subject: RE: Keymaster - 90COS

(b)(6)

Obtained by UndeadFOIA

Here is the draft MOA, please share, review, and make edits. I have marked it CUI out of caution, would appreciate your review and assessment for the proper classification. I had to remove the rest of your team since we haven't exchanged digital signatures, feel free to share with them.

V/r,

(b)(6)

(b)(6)

(b)(6)@darpa.mil <mailto:(b)(6)@darpa.mil>
(b)(6)@darpa.ic.gov <mailto:(b)(6)@darpa.ic.gov>

(b)(6) (office)

(b)(6) (cell)

From: (b)(6) GG-14 USAF ACC 90 COS/DD <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >
Sent: Friday, March 11, 2022 10:45 AM
To: (b)(6)@darpa.mil
<mailto:(b)(6)@darpa.mil> >; (b)(6) GG-13 USAF ACC 90 COS/CYK
<(b)(6)@us.af.mil <mailto:(b)(6)@us.af.mil> >; (b)(6)@darpa.mil
<mailto:(b)(6)@darpa.mil> >
Cc: (b)(6) TSgt USAF ACC 90 COS/CYT <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >; (b)(6) 2d Lt USAF ACC 90 COS/CYK <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >; (b)(6) GG-13 USAF ACC 90 COS/CYT <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >; (b)(6) GG-13 USAF ACC 90 COS/CYK <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >
Subject: RE: Keymaster - 90COS

We don't have a deadline per se, I just don't want to imply a sense of urgency and then fail to execute the funds. 2 months is a feasible timeline.

My understanding was that a \$1.5M investment from us is what you'll need to make a much larger investment on the DARPA side. So, that's the amount I'm targeting. Does that align with what you're thinking?

V/r,

(b)(6) Civ, DAF

Deputy Director

90th Cyberspace Operations Squadron

From: (b)(6)@darpa.mil
 <mailto:(b)(6)@darpa.mil> >
 Sent: Friday, March 11, 2022 9:39 AM
 To: (b)(6) GG-14 USAF ACC 90 COS/DD <(b)(6)@us.af.mil>
 <mailto:(b)(6)@us.af.mil> >; (b)(6) GG-13 USAF ACC 90 COS/CYK <(b)(6)@us.af.mil>
 <mailto:(b)(6)@us.af.mil> >; (b)(6)@darpa.mil <mailto:(b)(6)@darpa.mil> >
 Cc: (b)(6) TSgt USAF ACC 90 COS/CYT <(b)(6)@us.af.mil>
 <mailto:(b)(6)@us.af.mil> >; (b)(6) 2d Lt USAF ACC 90 COS/CYK <(b)(6)@us.af.mil>
 <mailto:(b)(6)@us.af.mil> >; (b)(6) GG-13 USAF ACC 90 COS/CYT <(b)(6)@us.af.mil>
 <mailto:(b)(6)@us.af.mil> >; (b)(6) GG-13 USAF ACC 90 COS/CYK <(b)(6)@us.af.mil>
 <mailto:(b)(6)@us.af.mil> >
 Subject: RE: Keymaster - 90COS

(b)(6)

(b)(5)

(b)(5)

(b)(5)

For our SA, what level of funding are we talking about?

[Redacted] (b)(5)

V/r,

[Redacted] (b)(6)

[Redacted] (b)(6)

[Redacted] @darpa.mil <mailto:[Redacted]@darpa.mil>

[Redacted] @darpa.ic.gov <mailto:[Redacted]@darpa.ic.gov>

[Redacted] (office)
[Redacted] (cell)

From: [Redacted] GG-14 USAF ACC 90 COS/DD <[Redacted]@us.af.mil>
<mailto:[Redacted]@us.af.mil> >
Sent: Friday, March 11, 2022 10:05 AM
To: [Redacted]@darpa.mil
<mailto:[Redacted]@darpa.mil> >; [Redacted] GG-13 USAF ACC 90 COS/CYK
<[Redacted]@us.af.mil <mailto:[Redacted]@us.af.mil> > [Redacted]@darpa.mil
<mailto:[Redacted]@darpa.mil> >
Cc: [Redacted] TSgt USAF ACC 90 COS/CYT <[Redacted]@us.af.mil
<mailto:[Redacted]@us.af.mil> >; [Redacted] 2d Lt USAF ACC 90 COS/CYK <[Redacted]@us.af.mil
<mailto:[Redacted]@us.af.mil> >; [Redacted] GG-13 USAF ACC 90 COS/CYT <[Redacted]@us.af.mil
<mailto:[Redacted]@us.af.mil> > [Redacted] GG-13 USAF ACC 90 COS/CYK <[Redacted]@us.af.mil
<mailto:[Redacted]@us.af.mil> >
Subject: RE: Keymaster - 90COS

Greetings All,

Jumping into this conversation finally.

Obtained by UndeadFOIA

First – We’re excited about Keymaster and this effort and want to get started as soon as possible. If there’s anything we can do or communicate to jump start things while an MOA is routing, please let me know because we’re all in.

Second – If a 3-star equivalent is signing at DARPA, we will likely need to go to the 16 AF/CC for signature. My preference is to work as much of the specifics as possible at our level and then do everything we can to streamline staffing from the squadron to the NAF. I’ve found when it goes the other direction a lot of the intent gets lost in translation.

Third – I have very high confidence that we will secure funding before an MOA is signed. Is my assumption correct that we will not be able to move that money absent an MOA? If so, I want to make sure I’m communicating correctly so that we don’t lose the money for not committing quickly enough.

Thanks to you all for working this.

V/r,

(b)(6), Civ, DAF

Deputy Director

90th Cyberspace Operations Squadron

From: (b)(6)@darpa.mil
<mailto:(b)(6)@darpa.mil> >
Sent: Friday, March 11, 2022 8:09 AM
To: (b)(6) GG-13 USAF ACC 90 COS/CYK <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >; (b)(6)@darpa.mil <mailto:(b)(6)@darpa.mil> >
Cc: (b)(6) GG-14 USAF ACC 90 COS/DD <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >; (b)(6) TSgt USAF ACC 90 COS/CYT <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >; (b)(6) 2d Lt USAF ACC 90 COS/CYK <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >; (b)(6) GG-13 USAF ACC 90 COS/CYT <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >; (b)(6) GG-13 USAF ACC 90 COS/CYK <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >
Subject: RE: Keymaster - 90COS

(b)(6)

Obtained by UndeadFOIA

Sorry for the delay on the MOA, working on it now. Who will be signing it? (b)(6) or someone higher at the 16th AF? Ours will be going to our director which is a 3 star equivalent. Typically we need someone close to that rank, however, it also makes sense for the person that owns the resources (e.g. funding, personnel, data, infrastructure, etc.) being provided to sign. Please advise on this.

The call with (b)(6) went great, he said he will be reaching out to the squadron commanders (90th and 367th) at a minimum, maybe others. He was very supportive of the effort.

V/r,

(b)(6)

(b)(6)

(b)(6)@darpa.mil <mailto:(b)(6)@darpa.mil>

(b)(6)@darpa.ic.gov <mailto:(b)(6)@darpa.ic.gov>

(b)(6) (office)

(b)(6) (cell)

From: (b)(6)

Sent: Wednesday, March 9, 2022 10:39 AM

To: (b)(6) GG-13 USAF ACC 90 COS/CYK <(b)(6)@us.af.mil>

<mailto:(b)(6)@us.af.mil>; (b)(6)@darpa.mil <mailto:(b)(6)@darpa.mil>

Cc: (b)(6) GG-14 USAF ACC 90 COS/DD <(b)(6)@us.af.mil>

<mailto:(b)(6)@us.af.mil>; (b)(6) TSgt USAF ACC 90 COS/CYT <(b)(6)@us.af.mil>

<mailto:(b)(6)@us.af.mil>; (b)(6) 2d Lt USAF ACC 90 COS/CYK <(b)(6)@us.af.mil>

<mailto:(b)(6)@us.af.mil>; (b)(6) GG-13 USAF ACC 90 COS/CYT <(b)(6)@us.af.mil>

<mailto:(b)(6)@us.af.mil>; (b)(6) GG-13 USAF ACC 90 COS/CYK <(b)(6)@us.af.mil>

<mailto:(b)(6)@us.af.mil>

Subject: RE: Keymaster - 90COS

(b)(6)

(b)(5)

MOA will be provided tomorrow.

(b)(6)

We are talking with (b)(6) tomorrow. We will mention this collaboration and I assume (b)(6) will want to reach out. I do not know at this point but will be sure to mention it.

V/r,

(b)(6)

(b)(6)

(b)(6) (office)
(b)(6) (cell)

(b)(6) (NSTS)

From: (b)(6) GG-13 USAF ACC 90 COS/CYK <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >
Sent: Wednesday, March 9, 2022 10:04 AM
To: (b)(6)@darpa.mil
<mailto:(b)(6)@darpa.mil> > (b)(6)@darpa.mil <mailto:(b)(6)@darpa.mil> >
Cc: (b)(6) GG-14 USAF ACC 90 COS/DD <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >; (b)(6) TSgt USAF ACC 90 COS/CYT <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >; (b)(6) 2d Lt USAF ACC 90 COS/CYK <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >; (b)(6) GG-13 USAF ACC 90 COS/CYT <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >; (b)(6) GG-13 USAF ACC 90 COS/CYK <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >
Subject: Re: Keymaster - 90COS

(b)(6)

Can you send me that quad slide we discussed so I can make sure our funding request is completely aligned with yours?

Obtained by UndeadFOIA

With that, I'll get our funding request slide done and sent to (b)(6) today, then waiting on the MOA.

Did you tell me (b)(6) wanted to talk to (b)(6)? (b)(6) was the CC of the 91st, but I'm sure they know each other.

GovCloud is ready to go, we have a non-ATO'd staging area and an IL4 final deployment area with resources ready.

Thanks,

(b)(6)

From: (b)(6)

Sent: Tuesday, March 8, 2022 12:34 PM

To: (b)(6) GG-13 USAF ACC 90 COS/CYK; (b)(6)

Cc: (b)(6) GG-14 USAF ACC 90 COS/DD; (b)(6) TSgt USAF ACC 90 COS/CYT;

(b)(6) L 2d Lt USAF ACC 90 COS/CYK; (b)(6) GG-13 USAF ACC 90 COS/CYT; (b)(6) GG-13 USAF ACC 90 COS/CYK

Subject: RE: Keymaster - 90COS

(b)(6)

To recap the plan:

(b)(5)

(b)(5)

Let me know if this aligns with your understanding as well and if so I'll get started on the MOA.

V/r,

(b)(6)

(b)(6)

(b)(6)

(office)

(cell)

(b)(6)

(NSTS)

From: (b)(6) GG-13 USAF ACC 90 COS/CYK <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >
Sent: Monday, March 7, 2022 5:14 PM
To: (b)(6)@darpa.mil <mailto:(b)(6)@darpa.mil>; (b)(6)
(b)(6)@darpa.mil <mailto:(b)(6)@darpa.mil> >
Cc: (b)(6) GG-14 USAF ACC 90 COS/DD <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil>; (b)(6) TSgt USAF ACC 90 COS/CYT <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil>; (b)(6) 2d Lt USAF ACC 90 COS/CYK <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil>; (b)(6) GG-13 USAF ACC 90 COS/CYK <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil>; (b)(6) GG-13 USAF ACC 90 COS/CYK <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >
Subject: Keymaster - 90COS

(b)(6)

I'm getting in touch to see what we can do about continuing to integrate Keymaster into 90COS development processes.

In the short term, we'd like to

Obtained by UndeadFOIA

1. continue the keymaster migration into our il4 ATO'd govcloud account.
2. extend keymaster as needed to interoperate with unified platform deployment tools and access controls.
3. Extend or improve keymasters ability to export data or otherwise interact with an airgapped development environment required by our partners.

I'm unclear on where AMDA contract stops and where we are imposing additional requirements and hear you may be able to help.

It's my understanding that we don't have funds ready today nor pricing from the contractor, but this is a high priority for us to use keymaster output as the basis for work we've already made a commitment to deliver.

(b)(6) is our project lead

(b)(6) is VR lead with day-to-day interaction with Keymsater.

(b)(6) is our internal "customer" of the proof of concepts that are refined from keymaster and expanded for downstream delivery.

Any of us can be available for questions.

(b)(6)
Senior Cyber Capability Developer
90 COS / CYK Weapons and Tactics
Comm: (b)(6)

From: (b)(4), (b)(6) <mailto:(b)(4), (b)(6)> >
Sent: Monday, March 7, 2022 2:29 PM
To: (b)(6) GG-13 USAF ACC 90 COS/CYK <(b)(6)@us.af.mil
<mailto:(b)(6)@us.af.mil> >, (b)(6) GG-13 USAF ACC 90 COS/CYT <(b)(6)@us.af.mil
<mailto:(b)(6)@us.af.mil> >
Subject: [Non-DoD Source] DARPA Contacts

Here are the two folks you need to reach out to at DARPA to get this ball rolling.

Obtained by UndeadFOIA

They're eager to help out - you all just need to ask for DARPA to pay for the first 90-120 days so we can start like... this week.

(b)(6)@darpa.mil <mailto:(b)(6)@darpa.mil>
(b)(6)@darpa.mil <mailto:(b)(6)@darpa.mil>

Thanks all!

--

(b)(4), (b)(6)
(Signal)
(b)(4), (b)(6) <mailto:(b)(4), (b)(6)>
10999 Interstate 10 Ste. 910
San Antonio, TX 78230

(b)(6)

(b)(6) **Subject:** Constellation/SCO (b)(6) discussion
Location: 675 10-500 Small Conference Room (TS/SAP/SCI)

Start: Mon 8/1/2022 9:00 AM
End: Mon 8/1/2022 11:00 AM
Show Time As: Tentative

Recurrence: (none)

Meeting Status: Not yet responded

Organizer: (b)(6)
Required Attendees

(b)(6)

(b)(6)

From: (b)(6)
Sent: Tuesday, June 7, 2022 8:33 AM
To: (b)(6)
Cc: Ulrey, Scott
Subject: RE: Keymaster - 90COS
Signed By: (b)(6)@darpa.mil

Hi (b)(6)

Sounds good.

v/r

(b)(6)

DARPA Contracts Management Office
Phone: (b)(6)
Mobile (b)(6)
Email: (b)(6)@darpa.mil

-----Original Message-----

From: (b)(6)@darpa.mil>
Sent: Tuesday, June 7, 2022 8:32 AM
To: (b)(6)@darpa.mil>
Cc: (b)(6)@darpa.mil>; (b)(6)@darpa.mil>; (b)(6)
(b)(6)@darpa.mil>; (b)(6)@darpa.mil>; Ulrey, Scott <Scott.Ulrey@darpa.mil>
Subject: Re: Keymaster - 90COS

(b)(6)

I'll be back in the office and available from 1430-1730. Any time then works. How about 1500-1530?

Regards,

(b)(6)

On 6/7/22, 8:26 AM, (b)(6)@darpa.mil> wrote:

Hi (b)(6)

I am coming into the office to review a classified J&A from 10:30-11:30 and then I have a quick conference call from 11:30-12:00. We could meet and discuss any time after that.

v/r

(b)(6)

DARPA Contracts Management Office
Phone: (b)(6)

Mobile: (b)(6)
Email: (b)(6)@darpa.mil

-----Original Message-----

From: (b)(6)@darpa.mil>
Sent: Tuesday, June 7, 2022 8:09 AM
To: (b)(6)@darpa.mil>; (b)(6)@darpa.mil>
Cc: (b)(6)@darpa.mil>; (b)(6)@darpa.mil>
(b)(6)@darpa.mil>; (b)(6)@darpa.mil>
Subject: Re: Keymaster - 90COS

(b)(6)

(b)(5)

Regards,

(b)(6)

On 6/7/22, 7:59 AM, (b)(6)@darpa.mil> wrote:

Hi (b)(6)

I spoke with (b)(6) last week and he advised COMP can not convert the funds from O&M to R&D. In order for them to be put under the Consortium OT, there would need to be tasks identified that fall within O&M vs. R&D. I am not comfortable at this time to say I would agree there are such tasks available to us to fund through this mechanism and we may be trying to cross a bridge too far within the limitations of the OT's purpose. However, if you can make a compelling case, I am willing to listen.

v/r

(b)(6)

DARPA Contracts Management Office

Phone: (b)(6)

Mobile

Email: (b)(6)@darpa.mil

-----Original Message-----

From: (b)(6)@darpa.mil>
Sent: Tuesday, June 7, 2022 7:52 AM
To: (b)(6)@darpa.mil>; (b)(6)@darpa.mil>
Cc: (b)(6)@darpa.mil>
Subject: Re: Keymaster - 90COS

(b)(6)

Is this something COMP can do? I'd like to get back to the Air Force so they can start the process of moving money on their end. This would go a long way in showing DIRO the value of Constellation/Orion OT that we are setting up.

Regards,

(b)(6)

On 6/2/22, 11:48 AM, (b)(6)@darpa.mil> wrote:

Hi (b)(6)

If COMP can and is willing to accept 3400 O&M funds and convert it to R&D funds, we could add it under one of the TPAs to be issued under the consortium OT. The only trigger I can think of is for that particular order, whatever fund type (b)(6) converts it to, we would need to continue funding that order with that or a higher fund type. If the outside agent fully funds the order, then this is not an issue, but if it's a split funded order, then we just need to make sure the fund types are the same and appropriate.

v/r

(b)(6)

DARPA Contracts Management Office

Phone: (b)(6)

Mobile: (b)(6)

Email: (b)(6)@darpa.mil

-----Original Message-----

From: (b)(6)@darpa.mil>

Sent: Thursday, June 2, 2022 9:54 AM

To: (b)(6)@darpa.mil>

Cc: (b)(6)@darpa.mil>; (b)(6)@darpa.mil>

Subject: Re: Keymaster - 90COS

(b)(6)

Thanks!

(b)(6)

Assuming that is true what steps do we need to take to leverage the Orion OT to utilize those funds. We would use those funds for a "task order" (I am still not sure what the correct term to use is) under the OT.

Regards,

(b)(6)

On 6/2/22, 9:49 AM, (b)(6)@darpa.mil> wrote:

(b)(6)

My best guess, based on the way 3400 is used below, is that it represents the Air Force basic symbol for their Operation and Maintenance (O&M) appropriation.

Thanks,

(b)(6)

(b)(6)

Defense Advanced Research Projects Agency

Comptroller Office

Voice: (b)(6)

Cell: (b)(6)

DSN:

Fax:

-----Original Message-----

From: (b)(6)@darpa.mil>

Sent: Thursday, June 2, 2022 9:28 AM

To: (b)(6)@darpa.mil>

Cc: (b)(6)@darpa.mil>; (b)(6)

(b)(6)@darpa.mil>

Subject: FW: Keymaster - 90COS

(b)(6)

Can you shed some light on the thread below? A transition partner is asking if we can take 3400 money but I am not sure what that is. (b)(6) (Cc'ed) is helping award an OT contract that I would want to use to apply the funds towards.

Regards,

(b)(6)

Information Innovation Office

Defense Advanced Research Projects Agency NIPR Email: (b)(6)@darpa.mil JWICS Email:

(b)(6)@darpa.ic.gov

work: (b)(6)

mobile: (b)(6)

fax: (b)(6)

On 6/1/22, 4:14 PM, "Ulrey, Scott" <Scott.Ulrey@darpa.mil> wrote:

(b)(6)

I'm not familiar with that number. Check with COMP?

Scott

-----Original Message-----

From: (b)(6)@darpa.mil>

Sent: Wednesday, June 1, 2022 3:54 PM

To: (b)(6)@darpa.mil>; Ulrey, Scott <Scott.Ulrey@darpa.mil>

Subject: FW: Keymaster - 90COS

(b)(6)

Scott:

Obtained by UndeadFOIA

Does 3400 money mean anything to you?

At our initial meeting for Constellation I know there was a discussion that the OT will be quite flexible and able to take many different colors of money. Before we get back to Rebecca I wanted to make sure I wasn't overpromising.

Regards,

(b)(6)

From: (b)(6) K GG-14 USAF ACC 90 COS/DD <(b)(6)@us.af.mil>
Sent: Thursday, May 26, 2022 7:02 PM
To: (b)(6)@darpa.mil
Cc: (b)(6) TSgt USAF ACC 90 COS/CYT <(b)(6)@us.af.mil>; (b)(6) 2d Lt USAF ACC 90 COS/CYK <(b)(6)@us.af.mil>; (b)(6) GG-13 USAF ACC 90 COS/CYT <(b)(6)@us.af.mil>
Subject: RE: Keymaster - 90COS

Still planning to be able to execute 3400?

From: (b)(6)@darpa.mil
<mailto:(b)(6)@darpa.mil>

Date: Thursday, May 26, 2022, 1:28 PM

To: (b)(6) GG-14 USAF ACC 90 COS/DD <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil>

Cc: (b)(6) TSgt USAF ACC 90 COS/CYT <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> > (b)(6) 2d Lt USAF ACC 90 COS/CYK <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> > (b)(6) GG-13 USAF ACC 90 COS/CYT <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >

Subject: RE: Keymaster - 90COS

(b)(6)

Update from our contracting management office FYSA:

We are still targeting the base award at earliest June 23 (but NLT the end of June).

V/r,

(b)(6)

(b)(6)

(b)(6)

@darpa.mil <mailto:(b)(6)@darpa.mil>

@darpa.ic.gov <mailto:(b)(6)@darpa.ic.gov>

(b)(6)

(office)

(cell)

From: (b)(6) GG-14 USAF ACC 90 COS/DD <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil>

Sent: Tuesday, May 17, 2022 11:26 AM

To: (b)(6)@darpa.mil
<mailto:(b)(6)@darpa.mil>

Cc: (b)(6) TSgt USAF ACC 90 COS/CYT <(b)(6)@us.af.mil>

<mailto:(b)(6)@us.af.mil>; (b)(6) 2d Lt USAF ACC 90 COS/CYK <(b)(6)@us.af.mil>

<mailto:(b)(6)@us.af.mil>; (b)(6) GG-13 USAF ACC 90 COS/CYT <(b)(6)@us.af.mil>

<mailto:(b)(6)@us.af.mil>

Subject: RE: Keymaster - 90COS

(b)(6)

TBD – I'm guessing I can get them in about 6 weeks if there is a vehicle I can execute on.

V/r,

(b)(6) Civ, DAF

Deputy Director

90th Cyberspace Operations Squadron

From: (b)(6)@darpa.mil
 <mailto:(b)(6)@darpa.mil>
 Sent: Monday, May 16, 2022 2:57 PM
 To: (b)(6) GG-14 USAF ACC 90 COS/DD (b)(6)@us.af.mil
 <mailto:(b)(6)@us.af.mil>
 Cc: (b)(6) TSgt USAF ACC 90 COS/CYT (b)(6)@us.af.mil
 <mailto:(b)(6)@us.af.mil>; (b)(6) 2d Lt USAF ACC 90 COS/CYK (b)(6)@us.af.mil
 <mailto:(b)(6)@us.af.mil>; (b)(6) GG-13 USAF ACC 90 COS/CYT (b)(6)@us.af.mil
 <mailto:(b)(6)@us.af.mil>
 Subject: RE: Keymaster - 90COS

(b)(6)

When will the funds will be available to you?

V/r,

(b)(6)

(b)(6)

(b)(6) (office)
(b)(6) (cell)

(b)(6) (NSTS)

From: (b)(6) GG-14 USAF ACC 90 COS/DD (b)(6)@us.af.mil
 <mailto:(b)(6)@us.af.mil>

Obtained by UndeadFOIA

Sent: Monday, May 16, 2022 3:48 PM

To: (b)(6)@darpa.mil
<mailto:(b)(6)@darpa.mil> >
Cc: (b)(6) TSgt USAF ACC 90 COS/CYT <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >; (b)(6) 2d Lt USAF ACC 90 COS/CYK <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >; (b)(6) GG-13 USAF ACC 90 COS/CYT <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >
Subject: RE: Keymaster - 90COS

I'm not sure that will be an issue but it may impact our ability to secure funding. Basically, until I can guarantee that I'll be able to execute, I won't be able to get the funds. Although, without the funds I know you'll struggle to execute.

V/r,

(b)(6) Civ, DAF

Deputy Director

90th Cyberspace Operations Squadron

From: (b)(6)@darpa.mil
<mailto:(b)(6)@darpa.mil> >
Sent: Monday, May 16, 2022 2:37 PM
To: (b)(6) GG-14 USAF ACC 90 COS/DD <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >
Cc: (b)(6) TSgt USAF ACC 90 COS/CYT <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >; (b)(6) 2d Lt USAF ACC 90 COS/CYK <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >; (b)(6) GG-13 USAF ACC 90 COS/CYT <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >
Subject: RE: Keymaster - 90COS

(b)(6)

We believe Jul at the earliest, Aug more realistic, as an estimate for when the base OT will be awarded. If you think that will be an issue, please let me know so that I can see if there is an opportunity to expedite.

V/r,

(b)(6)

(b)(6)

(b)(6) (office)
(b)(6) (cell)

(b)(6) (NSTS)

From: (b)(6) GG-14 USAF ACC 90 COS/DD <(b)(6)@us.af.mil>
 <mailto:(b)(6)@us.af.mil> >
 Sent: Friday, May 13, 2022 6:13 PM
 To: (b)(6)@darpa.mil
 <mailto:(b)(6)@darpa.mil> >
 Cc: (b)(6) TSgt USAF ACC 90 COS/CYT <(b)(6)@us.af.mil>
 <mailto:(b)(6)@us.af.mil> >; (b)(6) 2d Lt USAF ACC 90 COS/CYK <(b)(6)@us.af.mil>
 <mailto:(b)(6)@us.af.mil> >; (b)(6) GG-13 USAF ACC 90 COS/CYT <(b)(6)@us.af.mil>
 <mailto:(b)(6)@us.af.mil> >
 Subject: RE: Keymaster - 90COS

(b)(6)

Thanks! Looking forward to it.

V/r,

(b)(6) Civ, DAF

Deputy Director

90th Cyberspace Operations Squadron

From: (b)(6)@darpa.mil
 <mailto:(b)(6)@darpa.mil> >

Obtained by UndeadFOIA

Sent: Thursday, May 12, 2022 6:24 AM

To: (b)(6) GG-14 USAF ACC 90 COS/DD <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >
Cc: (b)(6) TSgt USAF ACC 90 COS/CYT <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >; (b)(6) 2d Lt USAF ACC 90 COS/CYK <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >; (b)(6) GG-13 USAF ACC 90 COS/CYT <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >
Subject: Re: Keymaster - 90COS

(b)(6)

Yes, the base contact is expected to be awarded soon. I will get an estimated timeline today from the team and give you an update.

V/r,

(b)(6)

On May 11, 2022, at 5:57 PM, (b)(6) GG-14 USAF ACC 90 COS/DD
<(b)(6)@us.af.mil <mailto:(b)(6)@us.af.mil> > wrote:

Any chance we've made any progress on this? I think we'll have money soon but will we have somewhere to send it?

V/r,

(b)(6) Civ, DAF

Deputy Director

90th Cyberspace Operations Squadron

From: (b)(6) GG-14 USAF ACC 90 COS/DD
Sent: Thursday, March 24, 2022 9:28 AM

Obtained by UndeadFOIA

To: (b)(6)@darpa.mil
<mailto:(b)(6)@darpa.mil>; (b)(6) GG-13 USAF ACC 90 COS/CYK
<(b)(6)@us.af.mil <mailto:(b)(6)@us.af.mil>>; (b)(6) TSgt USAF ACC 90 COS/CYT
<(b)(6)@us.af.mil <mailto:(b)(6)@us.af.mil>>; (b)(6) 2d Lt USAF ACC 90 COS/CYK
<(b)(6)@us.af.mil <mailto:(b)(6)@us.af.mil>>; (b)(6) GG-13 USAF ACC 90 COS/CYT
<(b)(6)@us.af.mil <mailto:(b)(6)@us.af.mil>>
Subject: RE: Keymaster - 90COS

If a 3-star equivalent is signing at DARPA, we will likely need to go to the 16 AF/CC for signature.

V/r,

(b)(6) Civ, DAF

Deputy Director

90th Cyberspace Operations Squadron

From: (b)(6)@darpa.mil
<mailto:(b)(6)@darpa.mil>
Sent: Thursday, March 24, 2022 9:25 AM
To: (b)(6) GG-14 USAF ACC 90 COS/DD <(b)(6)@us.af.mil
<mailto:(b)(6)@us.af.mil>>; (b)(6) GG-13 USAF ACC 90 COS/CYK <(b)(6)@us.af.mil
<mailto:(b)(6)@us.af.mil>>; (b)(6) TSgt USAF ACC 90 COS/CYT <(b)(6)@us.af.mil
<mailto:(b)(6)@us.af.mil>>; (b)(6) 2d Lt USAF ACC 90 COS/CYK <(b)(6)@us.af.mil
<mailto:(b)(6)@us.af.mil>>; (b)(6) GG-13 USAF ACC 90 COS/CYT <(b)(6)@us.af.mil
<mailto:(b)(6)@us.af.mil>>
Subject: RE: Keymaster - 90COS

(b)(6)

That's great, who do you think will sign on your end? Do we need to elevate this to someone at 16AF?

No need to staff this at this point. Currently, we are working through our processes to get Constellation approved. We should have direction from our leadership in the next few weeks. At that point, we can start the staffing process.

V/r,

(b)(6)

(b)(6)

(b)(6) (office)
(b)(6) (cell)

(b)(6) (NSTS)

From: (b)(6) GG-14 USAF ACC 90 COS/DD <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >
Sent: Thursday, March 24, 2022 10:18 AM
To: (b)(6)@darpa.mil
<mailto:(b)(6)@darpa.mil> >; (b)(6) GG-13 USAF ACC 90 COS/CYK
<(b)(6)@us.af.mil <mailto:(b)(6)@us.af.mil> >; (b)(6) TSgt USAF ACC 90 COS/CYT
<(b)(6)@us.af.mil <mailto:(b)(6)@us.af.mil> >; (b)(6) 2d Lt USAF ACC 90 COS/CYK
<(b)(6)@us.af.mil <mailto:(b)(6)@us.af.mil> >; (b)(6) GG-13 USAF ACC 90 COS/CYT
<(b)(6)@us.af.mil <mailto:(b)(6)@us.af.mil> >
Subject: RE: Keymaster - 90COS

Based on this convo, I'm comfortable proceeding with this as written.

V/r,

(b)(6) Civ, DAF

Deputy Director

90th Cyberspace Operations Squadron

From: (b)(6)@darpa.mil
<mailto:(b)(6)@darpa.mil> >
Sent: Thursday, March 24, 2022 8:26 AM
To: (b)(6) GG-13 USAF ACC 90 COS/CYK <(b)(6)@us.af.mil
<mailto:(b)(6)@us.af.mil> >; (b)(6) GG-14 USAF ACC 90 COS/DD <(b)(6)@us.af.mil
<mailto:(b)(6)@us.af.mil> >; (b)(6) TSgt USAF ACC 90 COS/CYT <(b)(6)@us.af.mil

Obtained by UndeadFOIA

<mailto:(b)(6)@us.af.mil> >; (b)(6) 2d Lt USAF ACC 90 COS/CYK <(b)(6)@us.af.mil
<mailto:(b)(6)@us.af.mil> >; (b)(6) GG-13 USAF ACC 90 COS/CYT <(b)(6)@us.af.mil
<mailto:(b)(6)@us.af.mil> >
Subject: RE: Keymaster - 90COS

(b)(6)

The key points for these agreements for transition is the agreement to provide access for our performers to data, operational environments, platforms, etc. and the resources- people, infrastructure etc.

The technical details and requirements, e.g., the hundreds of modules, would be captured in a technical proposal. Kudu will provide us a proposal and SOW that would capture these requirements.

V/r,

(b)(6)

(b)(6)

(b)(6)

(office)

(cell)

(b)(6)

(NSTS)

From: (b)(6) GG-13 USAF ACC 90 COS/CYK <(b)(6)@us.af.mil
<mailto:(b)(6)@us.af.mil> >
Sent: Thursday, March 24, 2022 9:17 AM
To: (b)(6) GG-14 USAF ACC 90 COS/DD <(b)(6)@us.af.mil
<mailto:(b)(6)@us.af.mil> >; (b)(6) TSgt USAF ACC 90 COS/CYT <(b)(6)@us.af.mil
<mailto:(b)(6)@us.af.mil> >; (b)(6) 2d Lt USAF ACC 90 COS/CYK <(b)(6)@us.af.mil
<mailto:(b)(6)@us.af.mil> >; (b)(6) GG-13 USAF ACC 90 COS/CYT <(b)(6)@us.af.mil
<mailto:(b)(6)@us.af.mil> >
Cc: (b)(6)@darpa.mil
<mailto:(b)(6)@darpa.mil> >
Subject: RE: Keymaster - 90COS

Sorry for the delay, I thought I replied, but don't see it in sent.

Obtained by UndeadFOIA

I believe we're already performing the 16AF commitments, the only potential burden is our ability to operate with 10x throughput starting year 1. That's a big ask given where we are with automation. That said, I see nothing that needs changed.

I'm hesitant with how loose this is worded – we could successfully execute this by holding meetings.

The success criteria is building a process to go from a handful of modules per year to hundreds of modules ready to be used and delivering on that promise. At what point, if ever, do we document a commitment to those numbers?

(b)(6)
Senior Cyber Capability Developer
90 COS / CYK Weapons and Tactics
Comm: (b)(6)

From: (b)(6) GG-14 USAF ACC 90 COS/DD <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >
Sent: Wednesday, March 23, 2022 11:16 AM
To: (b)(6) GG-13 USAF ACC 90 COS/CYK <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >; (b)(6) TSgt USAF ACC 90 COS/CYT <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >; (b)(6) 2d Lt USAF ACC 90 COS/CYK <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >; (b)(6) GG-13 USAF ACC 90 COS/CYT <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >
Cc: (b)(6)@darpa.mil
<mailto:(b)(6)@darpa.mil> >
Subject: RE: Keymaster - 90COS

Team,

Did y'all have a chance to look at this?

V/r,

(b)(6) Civ, DAF

Deputy Director

90th Cyberspace Operations Squadron

From: (b)(6) GG-14 USAF ACC 90 COS/DD

Sent: Friday, March 11, 2022 11:31 AM

To: (b)(6) GG-13 USAF ACC 90 COS/CYK <(b)(6)@us.af.mil

<mailto:(b)(6)@us.af.mil> > (b)(6) TSgt USAF ACC 90 COS/CYT <(b)(6)@us.af.mil

<mailto:(b)(6)@us.af.mil> > (b)(6) 2d Lt USAF ACC 90 COS/CYK <(b)(6)@us.af.mil

<mailto:(b)(6)@us.af.mil> >; (b)(6) GG-13 USAF ACC 90 COS/CYT <(b)(6)@us.af.mil

<mailto:(b)(6)@us.af.mil> >; (b)(6) GG-13 USAF ACC 90 COS/CYK <(b)(6)@us.af.mil

<mailto:(b)(6)@us.af.mil> >

Subject: FW: Keymaster - 90COS

Can y'all take a first stab at any edits to make sure it says what you think it should say?

V/r,

(b)(6) Civ, DAF

Deputy Director

90th Cyberspace Operations Squadron

From: (b)(6)@darpa.mil

<mailto:(b)(6)@darpa.mil> >

Sent: Friday, March 11, 2022 10:26 AM

To: (b)(6) GG-14 USAF ACC 90 COS/DD <(b)(6)@us.af.mil

<mailto:(b)(6)@us.af.mil> >; (b)(6)@darpa.mil <mailto:(b)(6)@darpa.mil> >

Subject: RE: Keymaster - 90COS

(b)(6)

Obtained by UndeadFOIA

Here is the draft MOA, please share, review, and make edits. I have marked it CUI out of caution, would appreciate your review and assessment for the proper classification. I had to remove the rest of your team since we haven't exchanged digital signatures, feel free to share with them.

V/r,

(b)(6)

(b)(6)

(b)(6)

@darpa.mil <mailto:(b)(6)@darpa.mil>

@darpa.ic.gov <mailto:(b)(6)@darpa.ic.gov>

(b)(6)

(office)

(cell)

From: (b)(6) GG-14 USAF ACC 90 COS/DD <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >
Sent: Friday, March 11, 2022 10:45 AM
To: (b)(6)@darpa.mil
<mailto:(b)(6)@darpa.mil> >; (b)(6) GG-13 USAF ACC 90 COS/CYK
<(b)(6)@us.af.mil <mailto:(b)(6)@us.af.mil> >; (b)(6)@darpa.mil
<mailto:(b)(6)@darpa.mil> >
Cc: (b)(6) TSgt USAF ACC 90 COS/CYT <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >; (b)(6) 2d Lt USAF ACC 90 COS/CYK <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >; (b)(6) GG-13 USAF ACC 90 COS/CYT <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >; (b)(6) GG-13 USAF ACC 90 COS/CYK <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >
Subject: RE: Keymaster - 90COS

We don't have a deadline per se, I just don't want to imply a sense of urgency and then fail to execute the funds. 2 months is a feasible timeline.

My understanding was that a \$1.5M investment from us is what you'll need to make a much larger investment on the DARPA side. So, that's the amount I'm targeting. Does that align with what you're thinking?

V/r,

(b)(6) Civ, DAF

Deputy Director

90th Cyberspace Operations Squadron

From: (b)(6)@darpa.mil
<mailto:(b)(6)@darpa.mil> >
Sent: Friday, March 11, 2022 9:39 AM
To: (b)(6) GG-14 USAF ACC 90 COS/DD <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >; (b)(6) GG-13 USAF ACC 90 COS/CYK <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >; (b)(6)@darpa.mil <mailto:(b)(6)@darpa.mil> >
Cc: (b)(6) TSgt USAF ACC 90 COS/CYT <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >; (b)(6) 2d Lt USAF ACC 90 COS/CYK <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >; (b)(6) GG-13 USAF ACC 90 COS/CYT <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >; (b)(6) GG-13 USAF ACC 90 COS/CYK <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >
Subject: RE: Keymaster - 90COS

(b)(6)

Agree on working as much of the specifics as possible at our level, we should be able to work things in parallel.

Ideally, we would like to roll this into one of the Constellation pilot efforts which has a larger scope but aligns with this effort. Constellation is working as fast as possible to establish an OTA that would be able to accept funding. I'll have to check on whether or not a MOA will be a requirement for this. We may be able to get away with a 7600, which is like an MOA but takes less time. Hopefully, we have the OTA established within the next two months.

What is your deadline, can you wait the two months for the Constellation OTA?

For our SA, what level of funding are we talking about?

Obtained by UndeadFOIA

I'll find out what the requirement will be for accepting money from DoD organizations for Constellation pilots. If it's just a 7600, we should do that, and in parallel, route an MOA to 16AF to capture the larger goals of Constellation. If it's an MOA, hopefully, we can expedite it.

V/r,

(b)(6)

(b)(6)

(b)(6) @darpa.mil <mailto:(b)(6)@darpa.mil>

(b)(6) @darpa.ic.gov <mailto:(b)(6)@darpa.ic.gov>

(b)(6) (office)
(b)(6) (cell)

From: (b)(6) GG-14 USAF ACC 90 COS/DD <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >
Sent: Friday, March 11, 2022 10:05 AM
To: (b)(6)@darpa.mil
<mailto:(b)(6)@darpa.mil> >; (b)(6) GG-13 USAF ACC 90 COS/CYK
<(b)(6)@us.af.mil <mailto:(b)(6)@us.af.mil> >; (b)(6)@darpa.mil
<mailto:(b)(6)@darpa.mil> >
Cc: (b)(6) TSgt USAF ACC 90 COS/CYT <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >; (b)(6) 2d Lt USAF ACC 90 COS/CYK <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >; (b)(6) GG-13 USAF ACC 90 COS/CYT <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >; (b)(6) GG-13 USAF ACC 90 COS/CYK <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >
Subject: RE: Keymaster - 90COS

Greetings All,

Jumping into this conversation finally.

Obtained by UndeadFOIA

First – We’re excited about Keymaster and this effort and want to get started as soon as possible. If there’s anything we can do or communicate to jump start things while an MOA is routing, please let me know because we’re all in.

Second – If a 3-star equivalent is signing at DARPA, we will likely need to go to the 16 AF/CC for signature. My preference is to work as much of the specifics as possible at our level and then do everything we can to streamline staffing from the squadron to the NAF. I’ve found when it goes the other direction a lot of the intent gets lost in translation.

Third – I have very high confidence that we will secure funding before an MOA is signed. Is my assumption correct that we will not be able to move that money absent an MOA? If so, I want to make sure I’m communicating correctly so that we don’t lose the money for not committing quickly enough.

Thanks to you all for working this.

V/r,

(b)(6) Civ, DAF

Deputy Director

90th Cyberspace Operations Squadron

From: (b)(6)@darpa.mil
<mailto:(b)(6)@darpa.mil> >
Sent: Friday, March 11, 2022 8:09 AM
To: (b)(6) GG-13 USAF ACC 90 COS/CYK <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> > (b)(6)@darpa.mil <mailto:(b)(6)@darpa.mil> >
Cc: (b)(6) GG-14 USAF ACC 90 COS/DD <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >; (b)(6) TSgt USAF ACC 90 COS/CYT <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >; (b)(6) 2d Lt USAF ACC 90 COS/CYK <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >; (b)(6) GG-13 USAF ACC 90 COS/CYT <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >; (b)(6) GG-13 USAF ACC 90 COS/CYK <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >
Subject: RE: Keymaster - 90COS

(b)(6)

Obtained by UndeadFOIA

Sorry for the delay on the MOA, working on it now. Who will be signing it? (b)(6) or someone higher at the 16th AF? Ours will be going to our director which is a 3 star equivalent. Typically we need someone close to that rank, however, it also makes sense for the person that owns the resources (e.g. funding, personnel, data, infrastructure, etc.) being provided to sign. Please advise on this.

The call with (b)(6) went great, he said he will be reaching out to the squadron commanders (90th and 367th) at a minimum, maybe others. (b)(6) was very supportive of the effort.

V/r,

(b)(6)

(b)(6) @darpa.mil <mailto:(b)(6)@darpa.mil>

(b)(6) @darpa.ic.gov <mailto:(b)(6)@darpa.ic.gov>

(b)(6) (office)
(b)(6) (cell)

From (b)(6)

Sent: Wednesday, March 9, 2022 10:39 AM

To: (b)(6) GG-13 USAF ACC 90 COS/CYK <(b)(6)@us.af.mil>

<mailto:(b)(6)@us.af.mil>; (b)(6) @darpa.mil <mailto:(b)(6)@darpa.mil>

Cc: (b)(6) GG-14 USAF ACC 90 COS/DD <(b)(6)@us.af.mil>

<mailto:(b)(6)@us.af.mil>; (b)(6) TSgt USAF ACC 90 COS/CYT <(b)(6)@us.af.mil>

<mailto:(b)(6)@us.af.mil>; (b)(6) 2d Lt USAF ACC 90 COS/CYK <(b)(6)@us.af.mil>

<mailto:(b)(6)@us.af.mil>; (b)(6) GG-13 USAF ACC 90 COS/CYK <(b)(6)@us.af.mil>

<mailto:(b)(6)@us.af.mil>; (b)(6) GG-13 USAF ACC 90 COS/CYK <(b)(6)@us.af.mil>

<mailto:(b)(6)@us.af.mil>

Subject: RE: Keymaster - 90COS

(b)(6)

Obtained by UndeadFOIA

See attached, as discussed, this is purposely very high level. The team owes us a technical proposal once the decision to move forward is made.

MOA will be provided tomorrow.

We are talking with (b)(6) tomorrow. We will mention this collaboration and I assume (b)(6) will want to reach out. I do not know at this point but will be sure to mention it.

(b)(6)

V/r,

(b)(6)

(b)(6)

(b)(6)

(office)

(cell)

(b)(6)

(NSTS)

From: (b)(6) GG-13 USAF ACC 90 COS/CYK <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >
Sent: Wednesday, March 9, 2022 10:04 AM
To: (b)(6)@darpa.mil
<mailto:(b)(6)@darpa.mil> >; (b)(6)@darpa.mil <mailto:(b)(6)@darpa.mil> >
Cc: (b)(6) GG-14 USAF ACC 90 COS/DD <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >; (b)(6) TSgt USAF ACC 90 COS/CYT <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >; (b)(6) 2d Lt USAF ACC 90 COS/CYK <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >; (b)(6) GG-13 USAF ACC 90 COS/CYK <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >; (b)(6) GG-13 USAF ACC 90 COS/CYK <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >
Subject: Re: Keymaster - 90COS

(b)(6)

Can you send me that quad slide we discussed so I can make sure our funding request is completely aligned with yours?

Obtained by UndeadFOIA

With that, I'll get our funding request slide done and sent to (b)(6) today, then waiting on the MOA.

Did you tell me (b)(6) wanted to talk to (b)(6)? (b)(6) was the CC of the 91st, but I'm sure they know each other.

GovCloud is ready to go, we have a non-ATO'd staging area and an IL4 final deployment area with resources ready.

Thanks,

(b)(6)

From: (b)(6)
Sent: Tuesday, March 8, 2022 12:34 PM
To: (b)(6) GG-13 USAF ACC 90 COS/CYK; (b)(6)
Cc: (b)(6) GG-14 USAF ACC 90 COS/DD; (b)(6) TSgt USAF ACC 90 COS/CYT;
(b)(6) 2d Lt USAF ACC 90 COS/CYK; (b)(6) GG-13 USAF ACC 90 COS/CYT; (b)(6) GG-13 USAF ACC 90 COS/CYK
Subject: RE: Keymaster - 90COS

(b)(6)

To recap the plan:

- HACCS
- * DARPA will send a draft MOA to the 90th outlining the collaboration with Constellation and
 - * 90th will review, edit, and staff the MOA for signature
 - * 90th will provide GovCloud access/resources to Kudu for initial integration with Keymaster (Kudu's initial LOE to be done under HACCS, pending PM's approval)

Obtained by UndeadFOIA

- * 90th will request additional funding (O&M) to support the Constellation HACCS pilot and send funds to DARPA
- * DARPA will allocate these funds towards the Constellation HACCS pilot and continue the transition effort

Let me know if this aligns with your understanding as well and if so I'll get started on the MOA.

V/r,

(b)(6)

(b)(6) (office)
(b)(6) (cell)

(b)(6) (NSTS)

From: (b)(6) GG-13 USAF ACC 90 COS/CYK <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >
Sent: Monday, March 7, 2022 5:14 PM
To: (b)(6)@darpa.mil <mailto:(b)(6)@darpa.mil>; (b)(6)
(b)(6)@darpa.mil <mailto:(b)(6)@darpa.mil> >
Cc: (b)(6) GG-14 USAF ACC 90 COS/DD <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil>; (b)(6) TSgt USAF ACC 90 COS/CYT <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil>; (b)(6) 2d Lt USAF ACC 90 COS/CYK <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil>; (b)(6) GG-13 USAF ACC 90 COS/CYT <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil>; (b)(6) GG-13 USAF ACC 90 COS/CYK <(b)(6)@us.af.mil>
<mailto:(b)(6)@us.af.mil> >
Subject: Keymaster - 90COS

(b)(6)

I'm getting in touch to see what we can do about continuing to integrate Keymaster into 90COS development processes.

In the short term, we'd like to

Obtained by UndeadFOIA

1. continue the keymaster migration into our il4 ATO'd govcloud account.
2. extend keymaster as needed to interoperate with unified platform deployment tools and access controls.
3. Extend or improve keymasters ability to export data or otherwise interact with an airgapped development environment required by our partners.

I'm unclear on where AMDA contract stops and where we are imposing additional requirements and hear you may be able to help.

It's my understanding that we don't have funds ready today nor pricing from the contractor, but this is a high priority for us to use keymaster output as the basis for work we've already made a commitment to deliver.

(b)(6) is our project lead

(b)(6) is VR lead with day-to-day interaction with Keymsater.

(b)(6) is our internal "customer" of the proof of concepts that are refined from keymaster and expanded for downstream delivery.

Any of us can be available for questions.

(b)(6)
Senior Cyber Capability Developer
90 COS / CYK Weapons and Tactics
Comm: (b)(6)

From: (b)(6)@kududyn.com <mailto:(b)(6)@kududyn.com> >
Sent: Monday, March 7, 2022 2:29 PM
To: (b)(6) GG-13 USAF ACC 90 COS/CYK (b)(6)@us.af.mil
<mailto:(b)(6)@us.af.mil> >; (b)(6) GG-13 USAF ACC 90 COS/CYT (b)(6)@us.af.mil
<mailto:(b)(6)@us.af.mil> >
Subject: [Non-DoD Source] DARPA Contacts

Here are the two folks you need to reach out to at DARPA to get this ball rolling.

Obtained by UndeadFOIA

They're eager to help out - you all just need to ask for DARPA to pay for the first 90-120 days so we can start like... this week.

(b)(6)@darpa.mil <mailto:(b)(6)@darpa.mil>
(b)(6)@darpa.mil <mailto:(b)(6)@darpa.mil>

Thanks all!

--

(b)(6)
(Signal)
(b)(6)@kududyn.com <mailto:(b)(6)@kududyn.com>
10999 Interstate 10 Ste. 910
San Antonio, TX 78230

(b)(6)

Subject: FLTCYBER SMOKE discussion
Location: OPS3

Start: Thu 12/16/2021 10:00 AM
End: Thu 12/16/2021 11:00 AM
Show Time As: Tentative

Recurrence: (none)

Meeting Status: Not yet responded

Organizer: (b)(6)

Required Attendees: (b)(6) (b)(6) USN CSA-63 (USA); (b)(6)
(b)(6) CDR USN FLTCYBER/COMTENTHFLT (USA); (b)(6)
(b)(6)

Signature Management using Operational Knowledge and Environments (SMOKE)

(b)(6)

Information Innovation Office (I2O)

Proposers Day

December 7, 2021





Program Goal

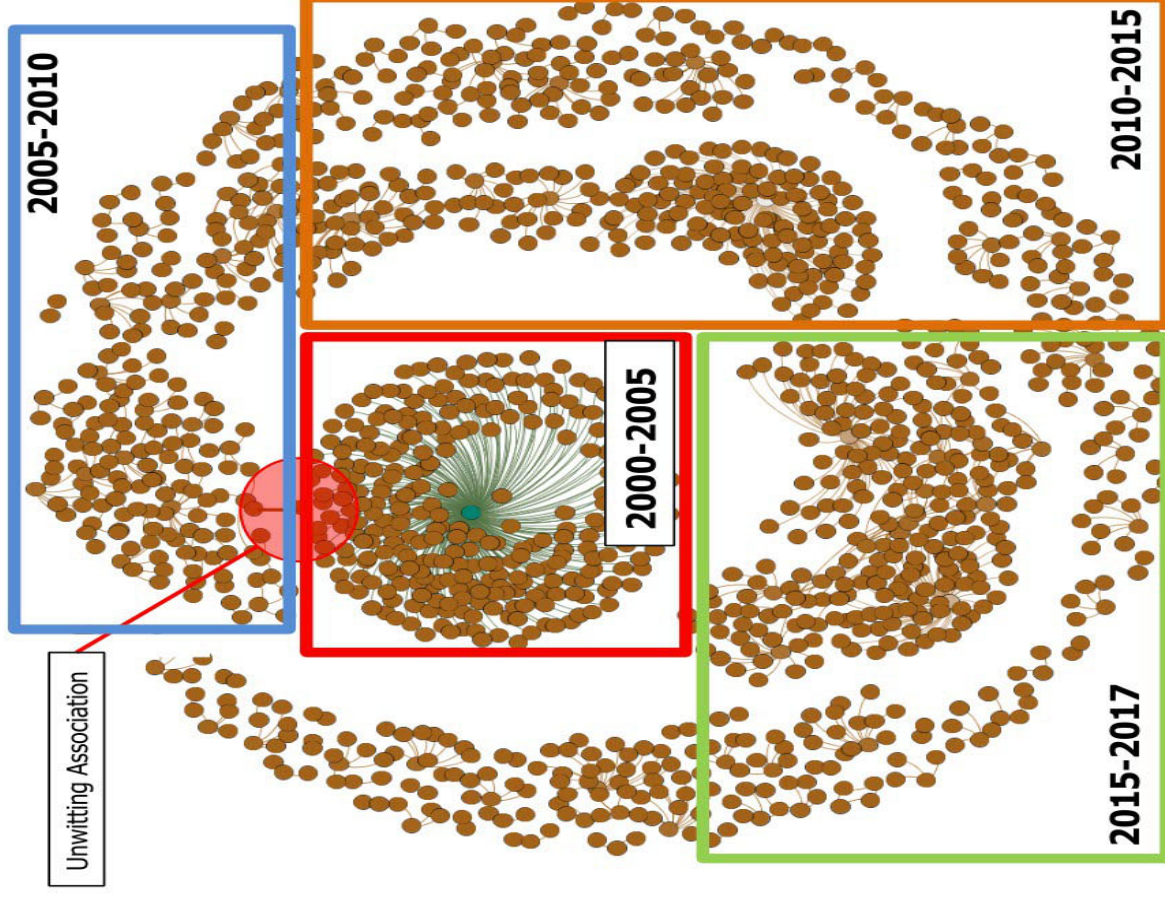
Develop technologies to generate evasive cyber infrastructure that accelerates red team cyber operations (CO) through automated threat-informed planning, emulation, and attribution risk assessment



Lack of Attribution Awareness Creates Unwitting Signatures

- Enhanced Attribution (EA) connected known compromises to visible infrastructure by fusing global, large-scale cyber datasets and uncovering latent patterns:
 - Account management activity (e.g., personas, IP's, browser fingerprints, cookies)
 - IP addresses and networks that exhibit similar patterns of behavior to known operational C2 infrastructure
 - Unique traffic analysis of passive network observables (e.g., ports, protocols, TCP flags, packets, timing)
- Starting from 113 domains and 25 IPs from a public report on Equation Group (EG), EA discovered additional infrastructure associated with this threat actor
 - Unwitting associations from grey space emissions allowed EA to generate a highly connected graph enumerating EG infrastructure over time
- Other "security vendors" conducted similar analysis and sinkholed (i.e. took ownership of) active EG C2 infrastructure which enables:
 - Tracking of current operations
 - Re-purposing of tools (i.e., false flag operations)
 - Disruption of current operations

Visible infrastructure used by Equation Group from 2000-2017





Today: Manual Infrastructure Preparation Doesn't Scale and Creates Attributable Signatures

- Large numbers of complex, interdependent decisions are described in free text and transformed into functional infrastructure
 - Which persona to use when registering a domain name
 - What IP's to use for initial points of presence on the internet
 - What 3rd party services and/or networks to use for hosting C2 servers
 - What protocols to use for communication with deployed tools
 - Which intermediate servers to use when tasking compromised machines
- Difficult to increase number of concurrent operations because free text does not enable automation
 - Spend weeks or months preparing cyber infrastructure for deployment
 - Require operators to be in the loop for even routine actions
- Decisions generate observable artifacts that form attributable patterns (e.g. mistakes, unforeseen changes)
 - Based on habit, institutional memory or convenience
 - Hold decisions in working memory during deployment
- Patterns from naïve automation are easily detected and attributed

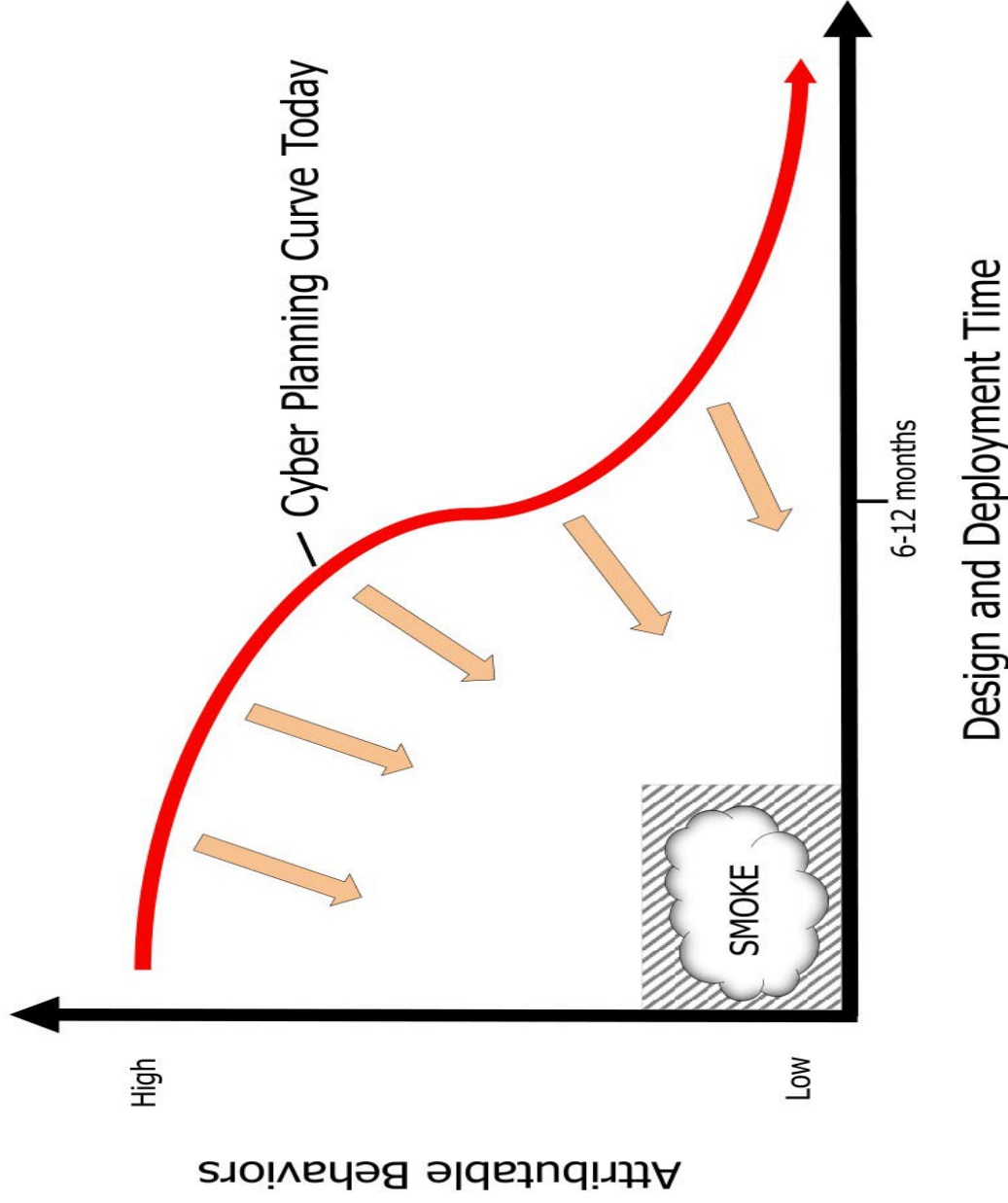
Cyber Infrastructure Planning Today



GryphonTechnologies



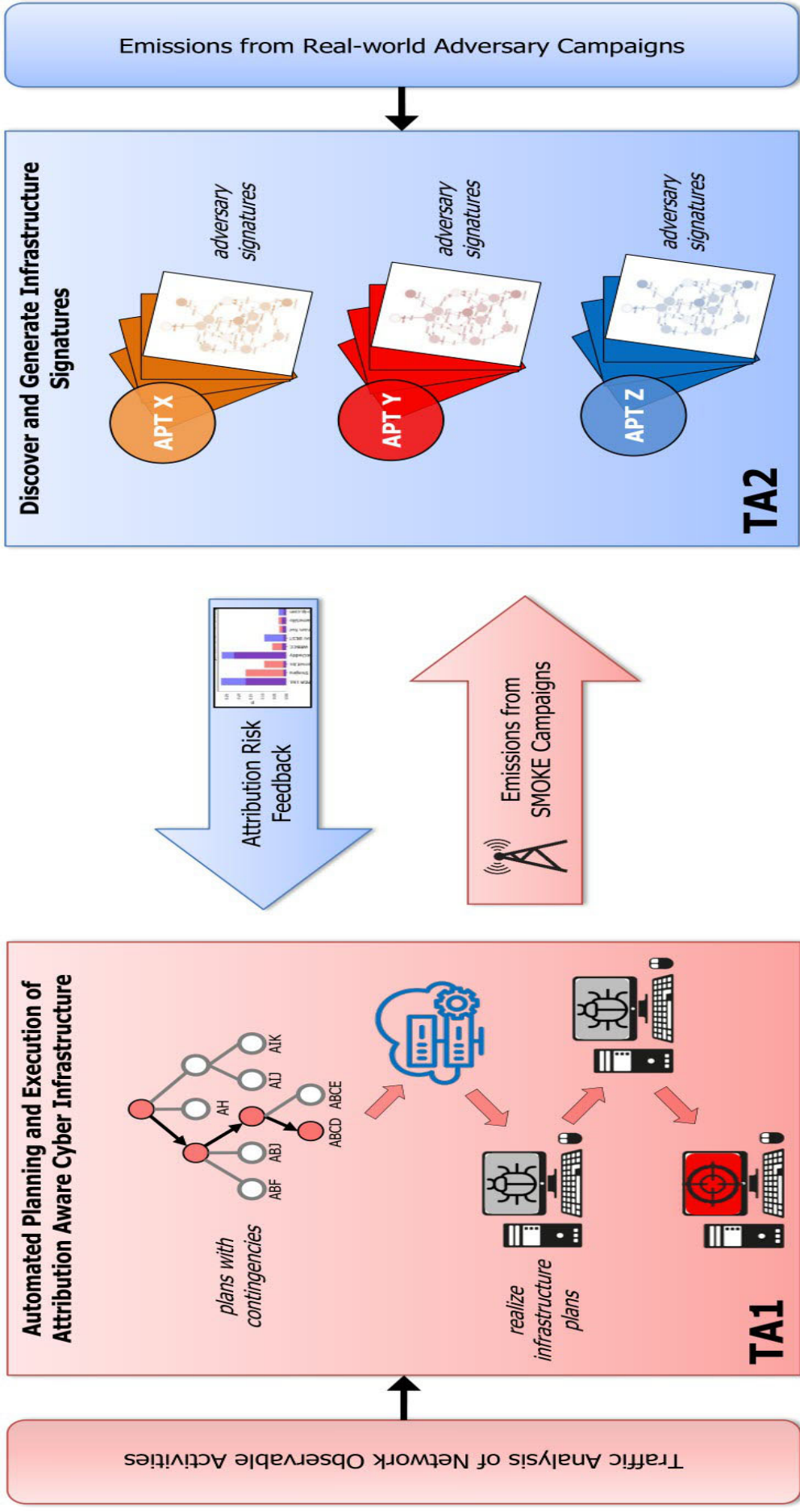
Signature Management using Operational Knowledge and Environments



Reduce attributable behaviors through **planning**, reduce design and deployment time through **automation**



SMOKE Technical Areas



Obtained by UndeadFOIA

Automated, scalable, and threat emulated lifecycle (i.e., acquisition, usage, and disposal) management of cyber infrastructure



TA1: Automated Planning and Execution of Attribution Aware Cyber Infrastructure

Technical Objectives:

- Build and analyze models of diverse attacks that evade or conform to desired signatures (e.g. emulate adversary activity)
- Train agents to learn infrastructure configurations capable of reaching a target network
- Realize infrastructure plans as components and evaluate in simulated attacks on realistic network environments (e.g., red team security assessments)

Key Research Challenges:

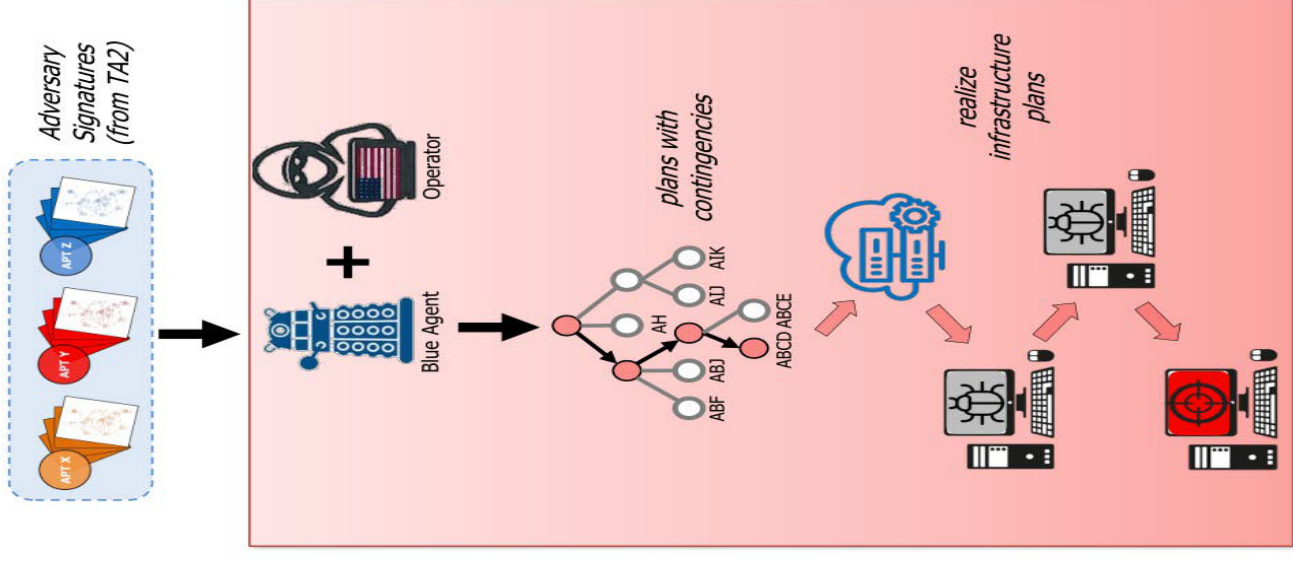
- Abstract away complexities of diverse network environments
- Operate in partially denied environments, reason under uncertainty, gain information about attribution risks and react to unforeseen detection or attribution events
- Measure the tradeoff among efficiency and effectiveness in terms of speed and evasion
- Provide explanations as to how infrastructure plans conform to, or evade, a set of signatures

Possible Approaches:

- Using reinforcement learning techniques to reason about plans under uncertainty and incorporate information about attribution into cyber infrastructure decisions
- Extending current cyber range and infrastructure as code technologies to realize infrastructure plans via a platform capable of autonomously deploying, managing, and continuously monitoring a globally diverse set of infrastructure elements

Metrics:

- Accuracy, scale, diversity, and speed of plan generation and execution





TA2: Discover and Generate Infrastructure Signatures

Technical Objectives:

- Inform operators of adversary signatures as they prepare cyber infrastructure in real-time
- Provide attribution risk assessments for planning and surveillance of cyber infrastructure in use

Key Research Challenges:

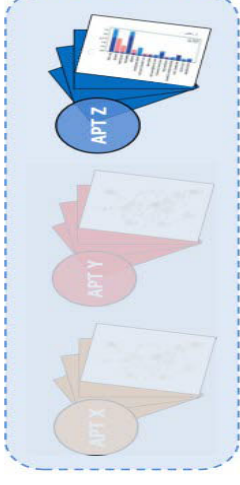
- Discover latent associations between infrastructure elements
- Automatically build and traverse associations (e.g., using unsupervised learning techniques) in large scale cyber datasets
- Expand the use of attribution techniques to non-experts
- Generate useful statistics for planners to predict how well infrastructure configurations will conform to or evade, desired signatures

Possible Approaches:

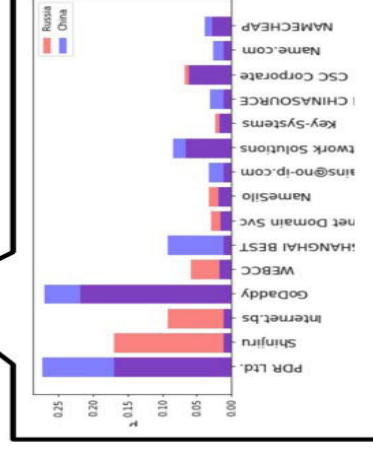
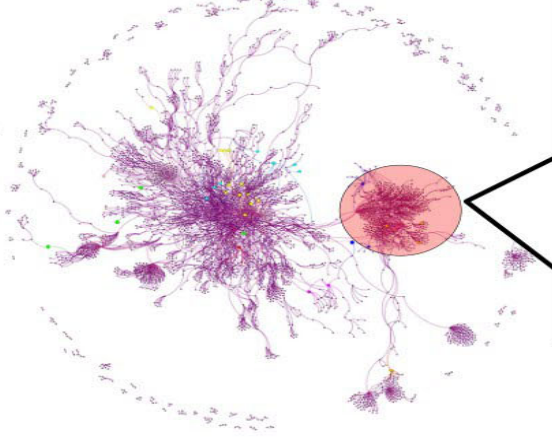
- Machine learning approaches to model infrastructure associations through automated pattern recognition and graph-based inference
- Design features and methods to measure attribution risk scores from infrastructure emissions

Metrics:

- Accuracy and effectiveness of adversary signatures and risk assessments



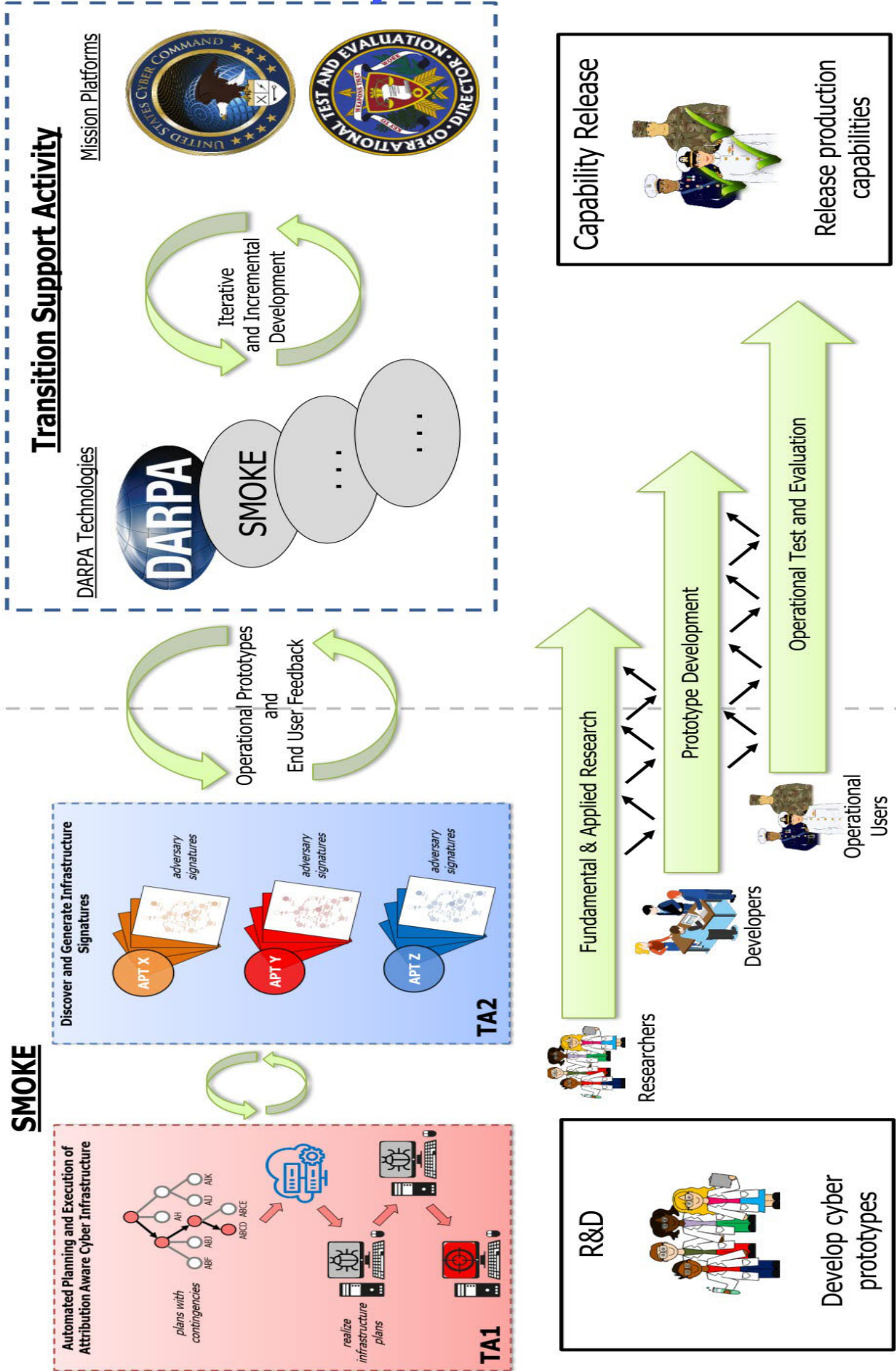
Visible Infrastructure used by APT Z



Distribution of Registrars used by APT Z



Transition Support Activity: Continuous transition of cyber capabilities





Schedule (notional)

		Year 1				Year 2				Year 3			
		Phase 1				Phase 2							
		Develop, demonstrate and evaluate individual components				Comparative evaluations formed by integrating program components							
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Technical Components	TA1: Automated Planning and Execution of Attribution Aware Cyber Infrastructure	Automate infrastructure plan generation on simulated data Initial integration with TA2 to generate plans informed by TA2 operational data				Automate infrastructure plan generation on operational data Fully integrate with TA2 (automated)							
	TA2: Discover and Generate Infrastructure Signatures	Automate infrastructure signature discovery Initial integration with TA1 to inform planning and feedback				Automate infrastructure signature discovery Fully integrate with TA1 Automated feedback							
	Transition Support Activity	Establish joint development environment				Integrate components on SMOKE platform				Integrate components on operational platforms			
Evaluation	Government Team	Demonstrate TA1, prototype on simulated data; TA2 on operational data				Demonstrate TA1 & TA2 prototype on operational				Demonstrate TA1 & TA2 on operational data Demonstrate fully integrated prototype on mission platform(s)			
	Technical exchanges and evaluations	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇
	Integrated demonstrations	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇
	Operational evaluation (pilot tests)	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇
	Baselines established	◆											
Kickoff and Principal Investigator Meetings	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	

↑ increasing realism and scale



Metrics

Technical Area	Metric	Phase 1 (18 months)	Phase 2 (18 months)
TA1: Automated Planning and Execution of Attribution Aware Cyber Infrastructure	Precision and recall for blue team attribution	Establish blue team baseline and reduce it by 10%	Establish blue team baseline and reduce it by 25%
	Number of nodes in simulated network	At least 3 networks with 100 nodes	At least 30 networks with 1,000 nodes
	Time to develop plan	Within 8 hours	Within 60 minutes
	Number of concurrent attack plan emulations	2	20
	Emulate multiple environments in parallel	10	100
	Time to deploy infrastructure	Within 2 days	Within 8 hours
	Integrated demonstration with TA2	In emulated environments	In real-world environments (e.g., red team security assessments)
TA2: Discover and Generate Infrastructure Signatures	Number of APTs	2	5
	Precision and recall for blue team attribution	Establish blue team baseline and increase it by 10%	Establish blue team baseline and increase it by 25%



Evaluation Details

SMOKE will evaluate components on networks of interest as part of real-world security assessments performed by red team partners

- Each exercise will be designed by an IV&V team that will generate multiple scenarios informed by prior related I2O efforts to simulate operations
- TA1 metrics focus on time, scalability, and attribution
 - TA1 components will be evaluated on the ability of cyber operators to reduce CO response time – and the ability to launch, and maintain multiple concurrent operations without being attributed
 - Infrastructure plans will be judged by their ability to confound attribution, recover infrastructure after attribution, and explain the rationale behind automated decisions to red team partners
- TA2 metrics focus on generating and detecting signatures
 - TA2 components will be measured according to how well signatures match the judgement of attribution experts, how well attribution risk assessment matches emulations, and how well they can be incorporated as sensors that provide meaningful feedback
- Precision and recall will be used to measure detection and attribution performance



Data Sources

- DARPA will facilitate access to relevant data sources by leveraging commercial relationships, USG relationships, and data exchange agreements
 - Proposers are strongly encouraged to propose their own data sources and methods, and to identify their data needs concretely
 - Proposers are strongly encouraged to offer up options for program-wide access to their own data sources
 - These options may or may not be exercised at the sole discretion of the Government. Proposers strongly encouraged to pursue their own data sets that will facilitate initial development
 - For TA1, of particular interest are data sources that enable the characterization of real-time global networks for candidate infrastructure elements
 - For TA2, of particular interest are data sources that enable the extraction of historical and current adversary signatures



Exemplary SMOKE Use Cases

Generation of infrastructure configurations that conform to operational security (OPSEC) risk profiles

- Inform cyber planners of attribution risk associated with infrastructure decisions and recommend configurations that adhere to OPSEC risk profiles
- Active, passive and indirect device enumeration and traffic analysis techniques, along with existing relevant datasets to identify and recommend infrastructure elements for plans
- Planning algorithms that understand and explain the probabilities of reaching a desired end-state
- Agents that can safely, reliably and autonomously acquire, interact and manage a diverse pool of available infrastructure elements in accordance with mission profiles

in preparation for cyber operations

Semi-autonomous persistent cyber operations for DOT&E to enable simultaneous cybersecurity assessments for DoD networks

- Automatically generate attack plans and set up C2 infrastructure that emulates advanced cyber threats
- Develop analytics that extract adversary signatures from relevant data sets and encode the signatures into recommended infrastructure plans
- Red teams can choose which plans to execute and task autonomous agents to set up and manage C2 infrastructure for simultaneous cybersecurity assessments of multiple DoD networks

to accelerate red team cyber security assessments of DoD networks

Real time risk assessments/feedback for cyber infrastructure and operational emissions

- Provide real-time feedback on infrastructure and operational emissions that may lead to discovery by adversaries or other cyber defenders. To achieve this goal, SMOKE will develop sensors that can monitor infrastructure artifacts that appear in public or commercial datasets and provide real-time attribution risk assessments to ensure infrastructure remains within operational security requirements.

for continuous surveillance of existing cyber infrastructure



Classification and Clearance Requirements

- The program will be conducted at the UNCLASSIFIED level
- Proposers addressing either TA1 or TA2 are not required to hold or obtain security clearances, but having personnel with Top Secret (TS) clearances that are eligible for Sensitive Compartmented Information (SCI) will be viewed positively
- Future TA1 or TA2 performers may benefit from having personnel with Top Secret clearances that are eligible for SCI and, in particular, a PI that has a TS clearance and is eligible for SCI, but it is not required and having or not having cleared personnel or a cleared PI will not be considered during TA1 and TA2 proposal evaluations
- Academic and small company participation is explicitly encouraged, regardless of any possession of a security clearance



Programmatic Details

- Proposals due on January 31, 2022
- Anticipated program start date: August 2022 (estimated)
- Proposers may only submit one proposal as lead institution per TA and proposals must address only one TA. Concretely, proposers may submit as lead institution for **at most** two proposals, namely one for TA1 and one for TA2
 - Procurement Contract (no Grants)
 - Other Transactions for prototype
- To expedite award contracting, proposers are encouraged to have sub-award agreements in place ahead of award notification
- Anticipated number of awards: Multiple awards are anticipated in Technical Area 1 and Technical Area 2
- In addition, proposers are encouraged to identify additional technologies that increase the operational use cases and associate them to proposal options. These optional add-ons may or may not be exercised at the sole discretion of the Government



Deliverables

Deliverable	Frequency
Annotated briefings	Within 2 weeks after kickoff and each review meeting
Technical Coordination Reports	Quarterly, within 10 calendar days after the end of each program quarter
Financial Reports	Monthly
System Development Plan	Within 1 month of the start of each phase
Software	Within one month after the end of each phase
Software Documentation	Within one month after the end of each phase
Hardware	At the end of the PoP
Phase and Final Technical Reports	At the end of each phase and at the end of the PoP



Next Steps

- **Remain logged into Zoom** to participate in the upcoming Q&A Session
- Encourage you to engage on the DARPA SMOKE Teaming Slack
- All questions must go to to SMOKE@darpa.mil and must be submitted by 2:20 PM EDT to be answered in today's session
- Q&A Session will begin at 2:50 PM EDT



www.darpa.mil

From: (b)(6)
To:
Cc:
Subject: FW: Cognitive State Measurement & Red Flag data
Date: Friday, November 22, 2019 11:10:49 AM
Attachments: [PACCS-infosheet.pdf](#)

V/r,

(b)(6)
(b)(6) (office)
(b)(6) (cell)

-----Original Message-----

From: (b)(6)@ainfosec.com>
Sent: Monday, May 20, 2019 6:15 PM
To: (b)(6)@darpa.mil>;
(b)(6)@darpa.mil>
Cc: (b)(6)@ainfosec.com>
Subject: Cognitive State Measurement & Red Flag data

(b)(6)

(b)(6) the Red Flag data should be in your SIPR account. Please let us know if there were any issues or if you need anything else. I've given the folks at Nellis a heads up, so they should be aware if you need anything from them. (b)(6) has been our primary POC for the data transfer: (b)(6)@us.af.mil <[mailto:\(b\)\(6\)@us.af.mil](mailto:(b)(6)@us.af.mil)> .

Also, I've attached the info sheet on the IR&D that we mentioned about using keystrokes to detect cognitive states. Our brief discussion on this reminded me of a related concept that we wanted to look into - Human Battle Damage Assessment. We've done some previous work in BDA for cyber operations, but D5 effects that target the operators (e.g., disruption, deception) were challenging because they require understanding the operator - have you induced a mental state, do they believe you? Similarly, if we can understand the operators' states, can we determine which actions will be most effective against them or automatically reconfigure them to back off when we determine the operator becomes suspicious?

Summary of the IR&D results: While we were operating on a very small dataset, we were able to distinguish between four levels of cognitive load with ~70% accuracy and two levels (high and low) with ~85% accuracy, though we suspect this accuracy would significantly increase with a larger, more

representative dataset (both number of users and amount of keystrokes). Similarly, our models are trained for individual users, but we suspect that if we can get a better dataset, then we may be able to identify clusters of individuals who manifest states in a similar enough way to build generalized models.

I'd love to talk more about this to see if this research could be useful for you! Let me know what you think.

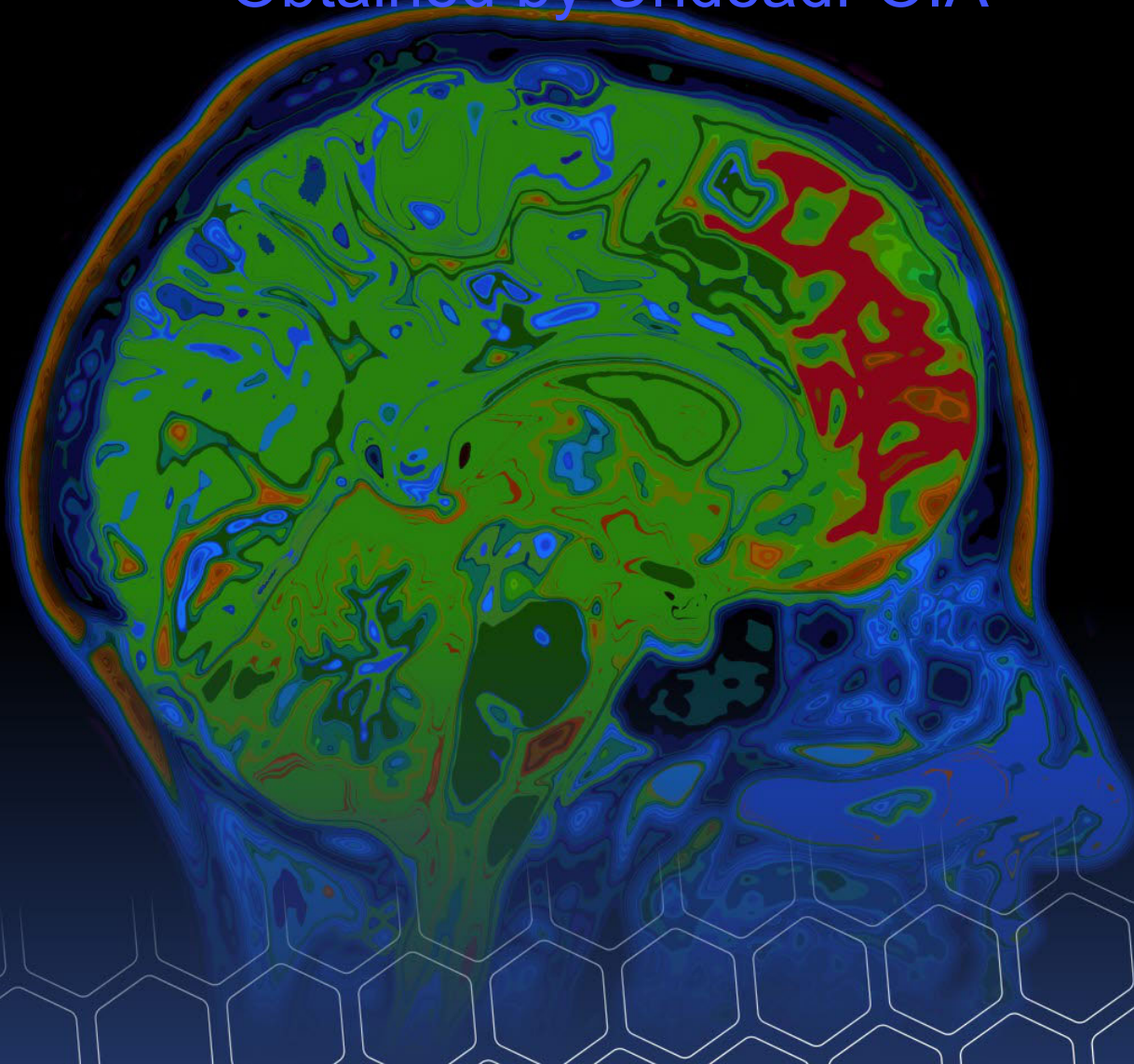
Best Regards,

(b)(6)

(b)(6)

Assured Information Security, Inc.

(b)(6)



PACCS

Prediction and Analysis of Cyber Scenarios

Predicting Mental States with Keystrokes

PACCS

Predicting Mental States with Keystrokes

OVERVIEW

PACCS is an Assured Information Security (AIS) internal research and development effort focused on predicting cognitive load using behavioral biometrics, such as keystrokes. AIS developed novel deep learning models to accurately predict changes in cognitive load using only keystrokes. These models were developed from data collected during a small pilot study.

KEY FEATURES

- Remote cognitive state detection
- No additional or expensive hardware required
- Discrete and unobtrusive

Research Methodology

Fourteen subjects participated in an experiment where cognitive load varied as subjects were asked to remember different sequences of numbers while performing typing tasks. The experiment was designed to minimize interference between the memorization and typing tasks. EEGs were used to collect ground-truth data.

Results

- Generalized model that predicts workload across all users proved infeasible
 - + Differences in load varied between users
- Models trained for an individual user successfully distinguished between four levels of cognitive load:
 - + Levels: Baseline (0 digits), low (4 digits), medium (5 digits), and high (6 digits).
 - + 69.4% distinguishing between all four levels
 - + 84.8% distinguishing between high and low workload
- Additional data is required to further refine the models and validate the results



FOR MORE INFORMATION

bd@ainfosec.com

ABOUT AIS

AIS is a cyber and information technology company that plays a leading role in supporting critical cyber operations for the United States Department of Defense and Intelligence Community. AIS employs cyber engineers and scientists throughout the United States.

New York • Colorado • Georgia • Oregon • Massachusetts • Maryland • Virginia

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Obtained by UndeadFOIA

From: (b)(6)
To: (b)(6)
Subject: Fwd: DARPA Enhanced Analytics Briefing
Date: Friday, November 16, 2018 7:52:22 AM
Attachments: 20181108-EA-DODIN.pdf
Untitled attachment 00054.htm

Wow, this looks way bigger then I thought (see below). I did not confirm anything with this guy yet. Do you still want to push it until next year?

Begin forwarded message:

From: (b)(6) JFHQ-DODIN J2 (US)"
<(b)(6)@mail.mil>
To: "(b)(6) COL USARMY JFHQ-DODIN J2 (US)"
<(b)(6)@mail.mil>, "(b)(6) JFHQ-DODIN J2 (US)"
<(b)(6)>, "(b)(6) USN (US)"
<(b)(6)@mail.mil>, "(b)(6) USARMY JFHQ-DODIN J2 (US)" <(b)(6)@mail.mil>, "(b)(6) JFHQ-DODIN J2 (USA)" <(b)(6)@mail.mil>, "(b)(6) USARMY JFHQ-DODIN J2 (US)" <(b)(6)@mail.mil>, "(b)(6) JFHQ-DODIN J2 (US)" <(b)(6)@mail.mil>, "(b)(6) JFHQ-DODIN J2 (US)" <(b)(6)@mail.mil>, "(b)(6) USARMY JFHQ-DODIN J2 (US)" <(b)(6)@mail.mil>, "(b)(6) LCDR USN JFHQ-DODIN J2 (US)" <(b)(6)@mail.mil>, "(b)(6) JFHQ-DODIN J2 (US)" <(b)(6)@mail.mil>, "(b)(6) JFHQ-DODIN J3 (US)" <(b)(6)@mail.mil>, "(b)(6) JFHQ-DODIN J3 (US)" <(b)(6)@mail.mil>, "(b)(6) USAF JFHQ-DODIN J3 (US)" <(b)(6)@mail.mil>, "Radesky, Sandra J CIV DISA ID (US)" <sandra.j.radesky.civ@mail.mil>, "Sheranko, Timothy P CIV DISA ID (US)" <timothy.p.sheranko.civ@mail.mil>, "Villwock, Amanda Jo CIV DISA ID (US)" <amanda.j.villwock.civ@mail.mil>, "(b)(6) JFHQ-DODIN J5 (US)" <(b)(6)@mail.mil>, "(b)(6) JFHQ-DODIN J8 (US)" <(b)(6)@mail.mil>, "(b)(6) JFHQ-DODIN J5 (US)" <(b)(6)@mail.mil>, "(b)(6) (b)(6), (b)(3):10 U.S.C. § 130b (b)(6)@darpa.mil>, (b)(6), (b)(3):10 U.S.C. § 130b (b)(6)@radium.ncsc.mil>
Subject: DARPA Enhanced Analytics Briefing

(b)(6), (b)(3):10 U.S.C. § 130b

(b)(6), (b)(3):10 U.S.C. § 130b

(b)(5)

(b)(5)

(b)(6)

(b)(5)

Thanks,

(b)(6), (b)(7)(E), (b)(3):10 USC 130e, (b)(3):50 U.S.C. § 3024(i)(1)

(b)(6), (b)(7)(E), (b)(3):10 USC 130e, (b)(3):50 U.S.C. § 3024(i)(1)

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(b)(4), (b)(5), (b)(6), (b)(7)(E), (b)(3):10 USC 130e, (b)(3):50 U.S.C. § 3024(i)(1)

(b)(4), (b)(5), (b)(7)(E), (b)(3):10 USC 130e, (b)(3):50 U.S.C. § 3024(i)(1)

(b)(7)(E), (b)(3):10 USC 130e, (b)(3):50 U.S.C. § 3024(i)(1)

(b)(7)(E), (b)(3):10 USC 130e, (b)(3):50 U.S.C. § 3024(i)(1)

Obtained by UndeadFOIA

From: (b)(6)
To: (b)(6) CIV USN (b)(6)
Cc: (b)(6)
Subject: Fwd: EA PI meeting: November 28th
Date: Monday, November 26, 2018 2:46:12 PM
Attachments: [EA Agenda 20181128 Final.pdf](#)
[ATT00001.htm](#)

(b)(6)

Great meeting you too, thanks for attending. I look forward to future collaboration/partnering efforts. Details for the meeting are below, agenda should be attached. (Sorry, trying to work from phone)

Registration is closed but if you come early, 0800, you can in process through security. If you have any problems please tell security to call me.

Parking is available across the street at the Ballston Mall/ Medstar ice rink.

Begin forwarded message:

From: (b)(6) <(b)(6)@darpa.mil>
Date: October 29, 2018 at 10:16:38 PM EDT
To: (b)(6) <(b)(6)@us.af.mil>, (b)(6) <(b)(6)@us.af.mil>, (b)(6) <(b)(6)@us.af.mil>, (b)(6), (b)(3):10 U.S.C. § 130b <(b)(6)@dc3.mil>, (b)(6), (b)(3):10 U.S.C. § 130b <(b)(6)@dc3.mil>, (b)(6) <(b)(6)@iat.org>, (b)(6), (b)(7)(C), (b)(7)(E) <(b)(3):50 U.S.C. 3605 Section 6 Public Law 86-36 <(b)(6)@gmail.com>, (b)(3):50 U.S.C. 3605 Section 6 Public Law 86-36 <(b)(3):50 U.S.C. 3605 Section 6 Public Law 86-36 <(b)(6)@us.af.mil>, (b)(6) <(b)(6)@mail.mil>, (b)(6) <(b)(6)@mail.mil>, (b)(6) <(b)(6)@mail.mil>, (b)(6) <(b)(6)@us.af.mil>, (b)(6) <(b)(6)@us.af.mil>, (b)(6) >, (b)(6) <(b)(6)@us.af.mil>, (b)(6), (b)(3):10 U.S.C. § 130b <(b)(6)@treasury.gov>, (b)(6) <(b)(6)@treasury.gov>, (b)(6) >, (b)(6) >, (b)(6) >, (b)(6) <(b)(6)@nsc.eop.gov>, (b)(6) <(b)(6)@nsc.eop.gov>, (b)(6) <(b)(6)@mail.mil>, (b)(6) <(b)(6)@mail.mil>, (b)(3):50 U.S.C. 3605 Section 6 Public Law 86-36

Obtained by UndeadFOIA

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U.S.C. 3605
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Public Law
86-36

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Law 86-36

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3605 Section 6
Public Law 86-36

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(b)(6) @tsarcenter.org" <(b)(6) @us.af.mil"
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 (b)(6)@iqt.org" <(b)(6)@iqt.org> (b)(6), (b)(7)(C), (b)(7)(E)
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 (b)(6)@mail.mil>, (b)(6)@fsarcenter.org"
 (b)(6)@fsarcenter.org>, (b)(6)@mail.mil"
 (b)(6)@mail.mil>, (b)(6)@isi.edu" <(b)(6)@isi.edu>,
 (b)(6)@twosixlabs.com" <(b)(6)@twosixlabs.com>,
 (b)(6)@cynnovative.com" <(b)(6)@cynnovative.com>,
 (b)(6)@kududyn.com" <(b)(6)@kududyn.com>, (b)(6)@kududyn.com"
 (b)(6)@kududyn.com>, (b)(6)@kududyn.com" <(b)(6)@kududyn.com>,
 (b)(6)@ainfosec.com" <(b)(6)@ainfosec.com>, (b)(6)@gatech.edu"
 (b)(6)@gatech.edu>
Cc: (b)(6)@darpa.mil>, (b)(6)
 (b)(6)@darpa.mil>, (b)(6)
 (b)(6)@darpa.mil>

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 Section 6
 Public Law
 86-36

(b)(3):50
 U.S.C. 3605
 Section 6
 Public Law
 86-36

Subject: EA PI meeting: November 28th

Greetings,

The next DARPA Enhanced Attribution program PI meeting is confirmed for November 28th at DARPA. Please see attached meeting agenda. We'll be meeting in the DARPA Conference Center. Address is 675 N. Randolph St, Arlington, VA.

If you plan to attend this event, please register using the following link:

Registration website:

<https://www.schafertmd.com/darpa/i2o/ea/pi/2018/nov/>

Please let us know if you have any questions.

V/r,

(b)(6)	
(b)(6)	(cell)

Enhanced Attribution PI Meeting

Wednesday, November 28, 2018

DARPA, 675 N Randolph St, Arlington, VA

8:00AM – 9:00AM	Registration
9:00AM – 9:05AM	Security Brief (b)(6) DARPA/I2O (b)(6)
9:05AM – 9:10AM	Opening Remarks (b)(6) DARPA/I2O (b)(6)
9:10AM – 11:00AM	(b)(4) (b)(4), (b)(6)
11:00AM – 11:45AM	(b)(4) (b)(6) USC Information Sciences Institute
11:45AM – 1:00PM	Lunch
1:00PM – 3:00 PM	(b)(4) (b)(6) Georgia Institute of Technology
3:00PM – 3:15PM	Break
3:15PM – 4:00PM	Enhanced Attribution (b)(6) Assured Information Security
4:00PM – 4:45PM	(b)(4) (b)(6) Two Six Labs
4:45PM – 5:00PM	Closing Remarks (b)(6) DARPA/I2O (b)(6)

From: (b)(6)
To:
Subject: Fwd: Invitation to an ENISA event in Brussels
Date: Wednesday, October 3, 2018 12:28:59 PM
Attachments: CTI-EU Event Final Agenda.docx
Untitled attachment 00141.htm

Do either (but not both) of you want to attend and/or speak on my behalf there?

Begin forwarded message:

From: (b)(6) (b)(6)
Date: October 3, 2018 at 09:19:17 EDT
To: (b)(6) @kududyn.com" (b)(6) @kududyn.com>
Cc: (b)(6) @darpa.mil" (b)(6) @darpa.mil>,
(b)(6) @gmail.com" (b)(6) @gmail.com>, (b)(6)
(b)(6), (b)(6)
Subject: FW: Invitation to an ENISA event in Brussels

Dear (b)(6)

on 5th and 6th November ENISA plans to organise the event CTI EU (<https://xxx.enisa.europa.eu/events/2018-cti-eu-event>). This event is a "bonding" event for the European CTI Community, just as the one last year in Rome.

Being in the phase to engage speakers, we would like to invite you to support with a presentation for the session with the (provisional) title "Active Defence" . A presentation similar to the one of (b)(6) in the summer school would be great. The presentations are foreseen for 30 Minutes.

I attach a draft agenda to this message.

It would be great if you could inform us about your availability at your earliest convenience (time pressure).

I thank you in advance for responding to this invitation at your earliest convenience.

Kind regards,

(b)(6)

(b)(6)

ENISA – Risk/Threat Management

(b)(6) & (b)(6)

Maroussi 151 24, Athens, Greece

Tel: (b)(6)
Mob: (b)(6)
Fax: (b)(6)

Web: xxx.enisa.europa.eu/rmra <hxxxp://xxx.enisa.europa.eu/rmra>

Fingerprint:

(b)(6)



ENISA CTI – EU: Final Agenda of the Event

The event is organized in cooperation with:



DG Connect/H1



Europol EC3



CERT-EU



European Defence Agency

30 October 2017	
Opening Session: CTI in EU Institutions	
14:00 – 16:00	<ul style="list-style-type: none">Welcome address <input type="text" value="(b)(6)"/> Link Campus UniversityIntroduction, organisational issues <input type="text" value="(b)(6)"/>Cyber Threat Intelligence Information Sharing for EU-led military Operations – Is the time ready now? <input type="text" value="(b)(6)"/> European Defence AgencyCyber Threat Intelligence at CERT EU <input type="text" value="(b)(6)"/> CERT EUCTI at ENISA: now and then <input type="text" value="(b)(6)"/>Cyber Intelligence within EC3 operations <input type="text" value="(b)(6)"/>
16:00 – 16:30	Break
16:30 – 17:00	<ul style="list-style-type: none">Digging in the dark web <input type="text" value="(b)(6)"/>
17:00	END OF DAY ONE



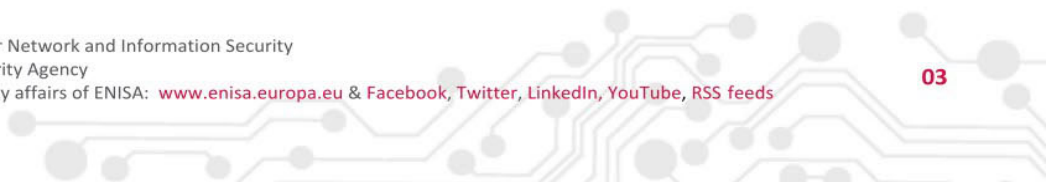


31 October 2017	
Parallel Session 1 – CTI Information Sharing	
09:00 – 11:30	<p>Facilitators: (b)(6)</p> <ul style="list-style-type: none">• Introduction (b)(6) CERT-EU• Active supporters' contributions<ul style="list-style-type: none">- (b)(6)- - - <p style="text-align: center;"><i>CONTRIBUTIONS FROM PARTICIPANTS</i></p>
11:30 – 12:00	Break
12:00 – 13:00	<ul style="list-style-type: none">• Stand up pitches from the audience (anyone can join, no slides needed)• Active discussion with all participants<ul style="list-style-type: none">- What are the issues faced by audience members?- What are the challenges?- Brainstorming on objectives for CTI information sharing- What does the future look like? <p>(b)(6) Moderation</p> <p style="text-align: center;"><i>CONSOLIDATION OF DISCUSSIONS</i></p>
13:00 – 14:00	Lunch Break





31 October 2017	
Parallel Session 2 – Active Defence	
09:00 – 11:30	<p>Facilitators: [redacted] (b)(6)</p> <ul style="list-style-type: none"> • Introduction [redacted] (b)(6) • Active supporters' contributions <ul style="list-style-type: none"> - What is active defence & areas of applicability [redacted] (b)(6) - Real cases of active defence [redacted] (b)(6) - Active defence tools (honeypots & traps & canaries) [redacted] (b)(6) - Active defence strategies, methods & frameworks [redacted] (b)(6) - Potential implications (legal, defence etc.) [redacted] (b)(6) <p style="text-align: center;"><i>CONTRIBUTIONS FROM PARTICIPANTS</i></p>
11:30 – 12:00	Break
12:00 – 13:00	<ul style="list-style-type: none"> • Stand up pitches from the audience (anyone can join, no slides needed) • Active discussion with all participants <ul style="list-style-type: none"> - What are the issues faced by audience members? - What are the challenges? - Brainstorming on objectives for CTI information sharing - What does the future look like? <p style="text-align: center;"><i>CONSOLIDATION OF DISCUSSIONS</i></p>
13:00 – 14:00	Lunch Break





31 October 2017	
Parallel Session 3 – Automation of CTI	
09:00 – 11:30	<p>Facilitators: (b)(6)</p> <ul style="list-style-type: none"> • Introduction <ul style="list-style-type: none"> (b)(6) • Active supporters' contributions <ul style="list-style-type: none"> - CTI elements - Formulation of CTI program requirements Purpose/use cases of CTI information; target groups - CTI modelling, taxonomies, frameworks and workflow issues Integrating/Mapping CTI to related internal processes and available governance and control - Tailoring CTI information to own needs Identify role of CTI in internal value creation processes and integrated it in decision making - Legal aspects of CTI - The role of CTI in coverage of legal/compliance requirements (b)(6) • CTI Automation Exercise <ul style="list-style-type: none"> - MISP Galaxy Cluster – ATT&CK Pattern DT exercise - IntelMQ – Incident Handling (b)(6) <p style="text-align: center;"><i>CONTRIBUTIONS FROM PARTICIPANTS</i></p>
11:30 – 12:00	Break
12:00 – 13:00	<ul style="list-style-type: none"> • CTI Automation Exercise Feedback <ul style="list-style-type: none"> - MISP Model – OSINT feed (Malware Information Sharing Platform) - IntelQM (b)(6) • Stand up pitches from the audience (anyone can join, no slides needed) • Active discussion with all participants <ul style="list-style-type: none"> - What are the issues faced by audience members? - What are the challenges? - Brainstorming on objectives for CTI information sharing - What does the future look like? <p style="text-align: center;"><i>CONSOLIDATION OF DISCUSSIONS</i></p>
13:00 – 14:00	Lunch Break



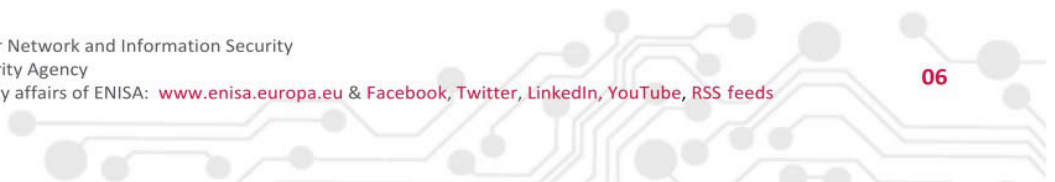


31 October 2017	
Parallel Session 4 – Embedding CTI in security organisation and good practices	
09:00 – 11:30	<p>Facilitators: (b)(6)</p> <ul style="list-style-type: none"> • Introduction (b)(6) • Using CTI for prioritizing security improvements (b)(6) • Active supporters' contributions <ul style="list-style-type: none"> - Scaling Intelligence for communities (b)(6) - Translating intelligence for the business (b)(6) - CTI capability framework (b)(6) <p style="text-align: center;"><i>CONTRIBUTIONS FROM PARTICIPANTS</i></p>
11:30 – 12:00	Break
12:00 – 13:00	<ul style="list-style-type: none"> • Stand up pitches from the audience (anyone can join, no slides needed) • Active discussion with all participants <ul style="list-style-type: none"> - What are the issues faced by audience members? - What are the challenges? - Brainstorming on objectives for CTI information sharing - What does the future look like? <p style="text-align: center;"><i>CONSOLIDATION OF DISCUSSIONS</i></p>
13:00 – 14:00	Lunch Break





31 October 2017	
Parallel Session 5 – CTI capabilities, skills, education training and research	
09:00 – 11:30	<p>Facilitators: [redacted] (b)(6)</p> <ul style="list-style-type: none"> • Introduction to CTI capabilities, skills, education training and research [redacted] (b)(6) • Active supporters' contributions <ul style="list-style-type: none"> - CTI analyst's skillset – practical application, what is done in Finland - "Why is Finland so cyber threat free?" – What skills & methods can we learn from Finland? [redacted] (b)(6) - CTI analyst's skillset – a syllabus - SANS - FOR578: Cyber Threat Intelligence [redacted] (b)(6) - Current training & educational opportunities: An academic approach & what the employers need [redacted] (b)(6) - Current EU research efforts in the area of CTI and Horizon 2020 research: The metrics and mapping the threats – SAINT Getting the threat data – SISSDEN [redacted] (b)(6) - Current skills gap for capable CTI analysts: Training for forensics & analysis [redacted] (b)(6) <p style="text-align: center;"><i>CONTRIBUTIONS FROM PARTICIPANTS</i></p>
11:30 – 12:00	Break
12:00 – 13:00	<ul style="list-style-type: none"> • Stand up pitches from the audience (anyone can join, no slides needed) • Active discussion with all participants <ul style="list-style-type: none"> - What is the CTI analyst's skillset? - Current skills gap and how this gap can be bridged? - What and where are CTI training & educational opportunities? - EU research efforts in the area of CTI and Horizon 2020? <p style="text-align: center;"><i>CONSOLIDATION OF DISCUSSIONS</i></p>
13:00 – 14:00	Lunch Break



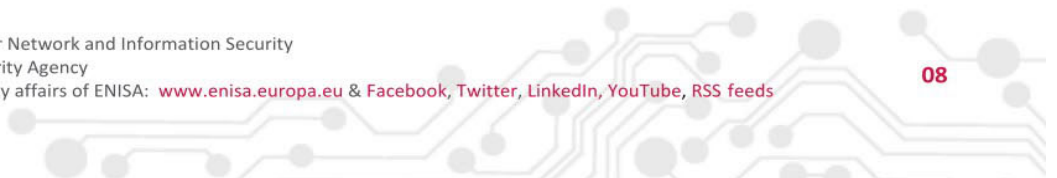


31 October 2017	
Afternoon Plenary Session	
14:00 – 16:30	<ul style="list-style-type: none">• Presentation of session results<ul style="list-style-type: none">- CTI Information Sharing [redacted] (b)(6)- Active Defence [redacted] (b)(6)- Automation of CTI [redacted] (b)(6)- Embedding CTI in security organisation and good practices [redacted] (b)(6)- CTI capabilities, skills, education, training and research [redacted] (b)(6)• Concluding remarks [redacted] (b)(6)
END OF EVENT	





Demonstrators	
30th and 31st October	
SISSDEN Project	H2020 Project, https://sisssden.eu/
SHIELD	H2020 Project, https://www.shield-h2020.eu/
AEGIS	H2020 Project, http://aegis-project.org/
C3ISP	H2010 Project, http://c3isp.eu
MISP	Malware Information Sharing Platform, http://www.misp-project.org/
IntelMQ	Incident Handling Automation, https://github.com/certtools/intelmq
AbuseHelper	https://github.com/abusesa/abusehelper
MineMeld	Palo Alto Networks, https://www.paloaltonetworks.com/products/secure-the-network/subscriptions/minemeld
Lutech Cyber Threat Intelligence	Cyber threat intelligence platform, https://security.lutech-group.com/
ENISA ETL App	ETL visualisation tool, https://etl.enisa.europa.eu



From: (b)(6)
To:
Subject: FYI
Date: Monday, November 1, 2021 9:32:23 AM
Attachments: [Gigamon-Orient Presentation.pptx](#)

V/r,

(b)(6)
(b)(6) (office)
(b)(6) (cell)
(b)(6) (NSTS)

Insight into Network Communications at 'Superscale'

Capitalizing upon the power of metadata to manage,
analyze and secure networks of any scale.

The solution for the

(b)(4)

(b)(6)

Gigamon

(b)(6)

Ocient



Created the Network Visibility market in 2004

Recognized market leader:

- + Government: 58% share (~6x competition)
- + Enterprise: 38% share (~2x competition)
- + 10 of top 10 Federal Agencies
- + 84 of Fortune-100

The provider of super-scale metadata generation from physical, virtual and cloud infrastructure.

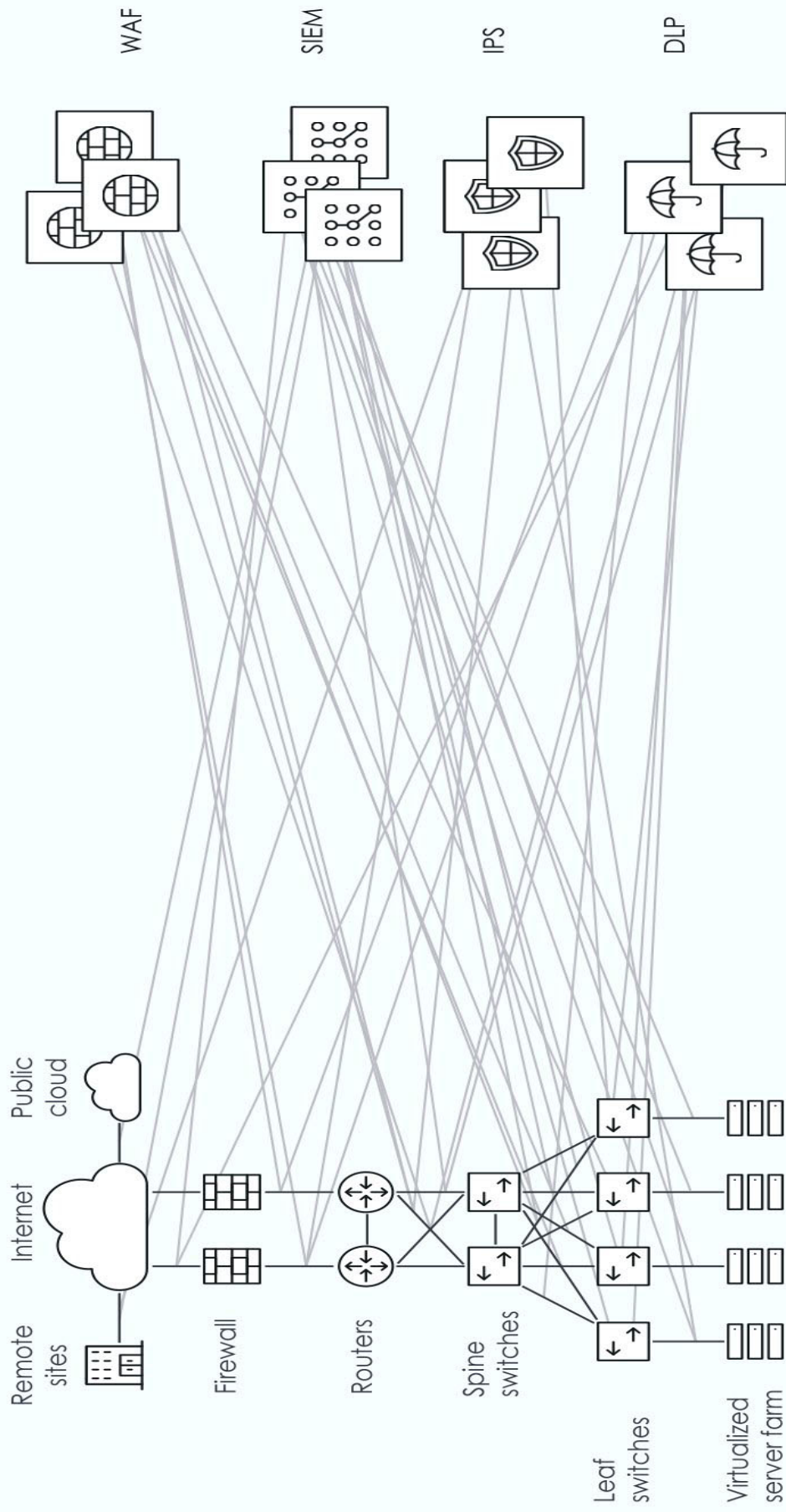
Fast delivery-of-value; ROI in <7 months with 50% cost reduction of tooling.

Endorsed by leading analysts (Gartner, Forrester, ESG).

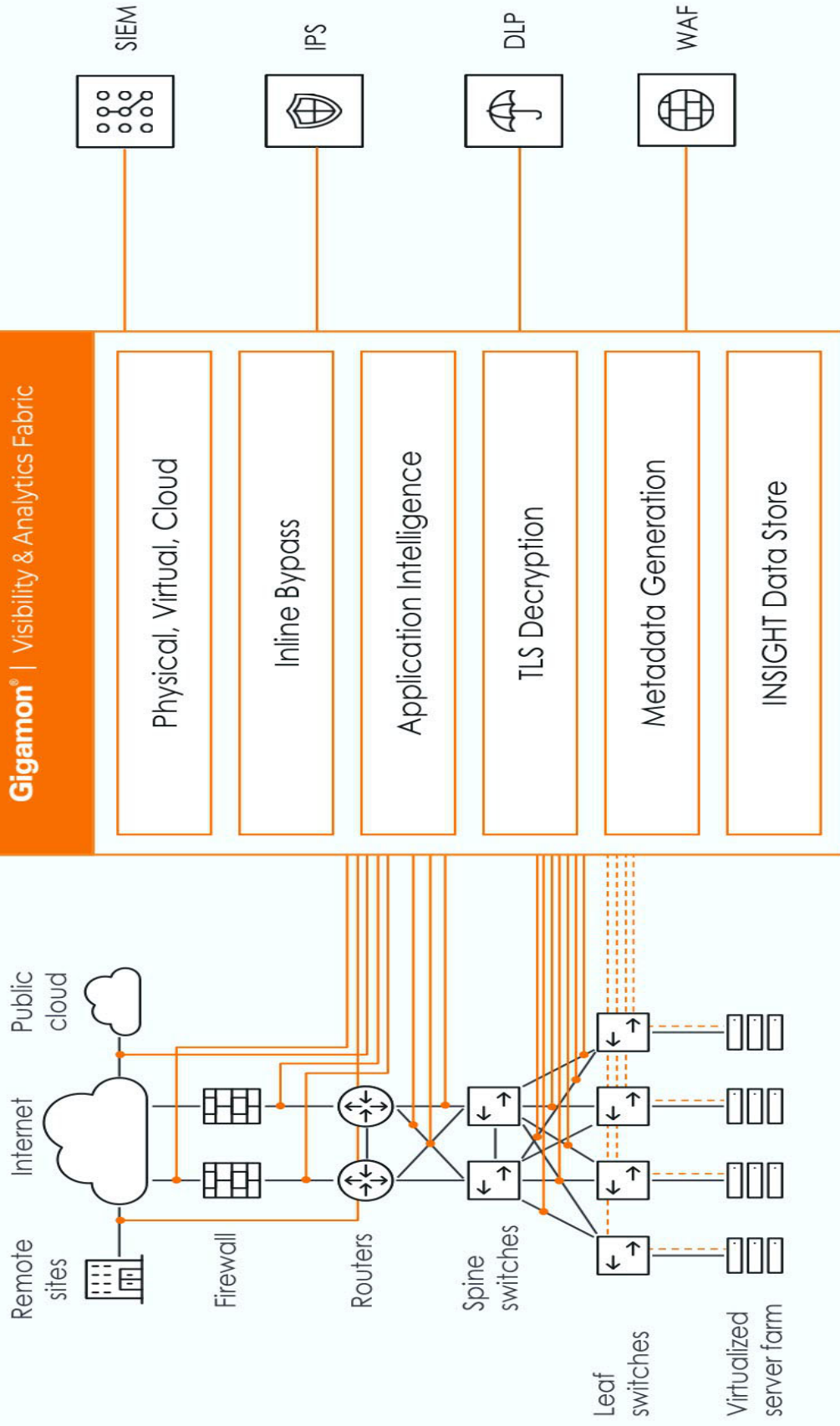
(b)(4)



Before Gigamon



After Gigamon





Ocient Overview

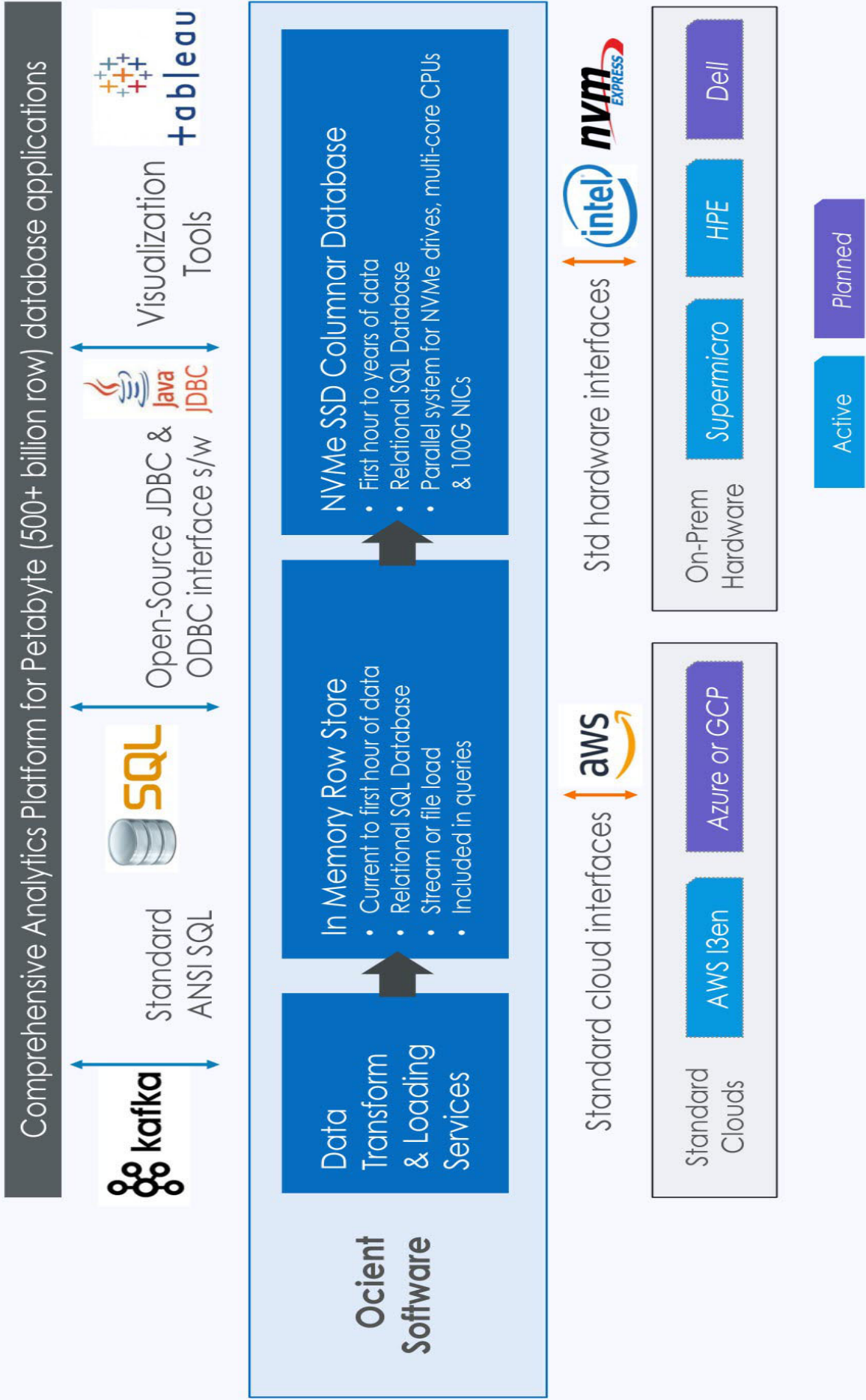
2014 - 2015

- + Leading Technology Company, Leading Telco, Leading DoD Organization, and Leading IC Agency all identify needs for database faster and bigger than any commercial or open source systems.
- + Intel and other vendors release next-generation SSD, CPU, and networking roadmaps.
- + Ocient research project validates new architecture for next-generation database.
- + IBM purchases Cleversafe in 2015 for over \$1.3 billion.

2016 - today

- + Management team with 100+ person-years of expertise in developing & deploying enterprise software.
- + \$65M of capital raised (Greycroft, OCA, In-Q-Tel, PSP Partners, PGVC, Valor Equity Partners, VCapital, Hyde Park Angels, MIT, Northwestern Alumni Ventures Group)
- + Technical team passes 75 engineers and 200 person-years of Ocient software development.
- + Ocient releases software and services for analysis of massive datasets that benchmarks generally 10x faster, at lower cost, & scales further than alternatives
- + Initial orders received for Bid & Exchange, Network Security and Geospatial systems.
- + First 7 patents issued; 163 more in process.

Ocient Offering: Software or Service



(b)(4)

Requirements

- + Unsampling, unfiltered traffic
- + A means to identify a device/individual
- + Real-time ingestion at 100Gb=>Tbs of metadata
- + Data transformation, streaming and query-able within seconds
- + Store Pb=>Eb w/out replication or many indexes
- + Support ANSI SQL for needle-in-haystack queries
- + Enable visualization of data, queries, system
- + Cross correlation of protocols

Challenges

- + Overcome multiple traffic encapsulation layers e.g.,
 - + MPLS
 - + VXLAN
 - + GRE
- + Accommodate the volume of traffic from diverse locations.
- + Filter out irrelevant traffic (e.g., routing protocols) while maintaining high-fidelity metadata generation.
- (b)(4)
- + Resolved through Ocient partnership

Future Expansion

- + Deployment across multiple service providers / data centers
 - + Expand within the current POC SP locations
- (b)(4)
- + Explore further use-cases and analytics to address additional requirements in line with legislation
- + Roadmap to support anticipated and continued growth in traffic volumes, speeds and density.

(b)(4)

(b)(4)

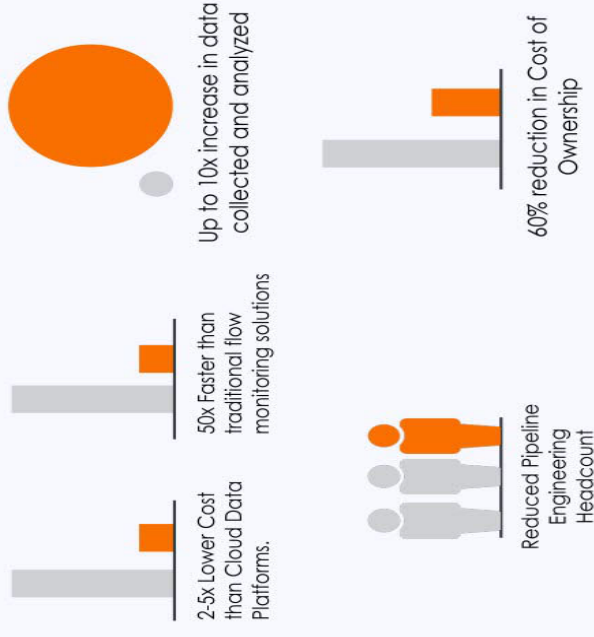
+

- + Multi-Pb scale allows higher data resolution and retention
- + Faster Query responses lead to quicker crime detection responses, faster than any NoSQL alternatives
- + No costly pipelines, batching, storage or analysis – Industry leading TCO
- + Flexibility: Run in your datacenters (Ocient managed service or in public cloud)
- + Leverage SQL's powerful grouping, sorting, aggregation, windowing at PB+ scale

“ The Ocient solution allowed us to query data in seconds, which previously took hours to return results with our old system.

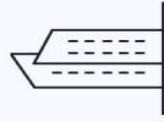
- Telecom Operator

(b)(4)



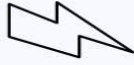
New Architecture; New Design

Competitors deliver only 2-3. Gigamon & Ocident delivers all 5.



Truly Massive Scalability

- + Active datasets of 100 Petabyte and beyond
- + Query performance maintains even as data grows



Disruptive Speed Increase

- + New parallel database engine in C++ with Plan Swarm Optimizer
- + 5 to 50 times faster without pre-tuning – typically 10x faster than alternatives



Best-in-Industry Cost of Ownership

- + Requires 1/5 the storage footprint with parity coding vs. copies
- + Commodity hardware or standard cloud servers
- + High performance using SSD at \$0.20/GB vs. DRAM at \$5/GB



Flexible of Capabilities

- + Relational ANSI SQL with IP, MAC, complex array, tuple, GIS, and scalar functions
- + Integrated, massive-speed ETL with dynamic schema changes



Fast Time to productivity

- + Complete Use Case Solutions
- + Deep technical sales engagement

— Supporting Materials

NetVUE: Run Fast

Optimize performance
and uptime to drive
business agility and
innovation

Performance & Uptime

Reduce router and switch overload
Send only relevant traffic to tools

Cloud Adoption

De-risk cloud migration
Cloud and container visibility

Business Agility

Easier to make network changes
Faster root cause analysis

SecureVUE: Stay Secure

Mitigate business risk by identifying and preventing internal and external threats

Faster Response

Faster detection and response
Deploy tools with minimal disruption

No Blind Spots

Visibility into encrypted traffic
Gain insight to user & apps behavioral

Cloud Security

Extend security posture to the Cloud
Visibility into east-west traffic

MobileVUE: 5G Ready

Complete network and subscriber visibility of your network, security and customer experience tools

5G Ready

Enable smooth transition to 5G/CUPS
Identify packet source for traffic brokering

Subscriber Visibility

Gain deeper customer insights
Maximize customer experience, minimize costs

NFV Tool Efficiency

Acquire and deliver relevant traffic
Optimize tools performance and efficiency

"It's much easier for our SOC team to threat hunt targets when they don't need to examine irrelevant data. As an organization we're stronger and more streamlined, better able to thwart attacks and prevent outages."

UTILITY

Challenge

Largest government-owned power generation utility faced six-figure upgrade to comply with data retention policy

A power gen utility that serves 10 million people, was faced with a six-figure upgrade to increase the data retention capacity of their threat detection tool to meet compliance goals.

Solution

Gigamon Application Visibility and Filtering eliminated the need a six-figure upgrade and enables

- + 400% increase in storage capacity of threat detection tool as a result of filtering out low-risk streaming traffic
- + Reduced traffic by 50% by no longer inspecting traffic from 130 safe apps
- + Identified unapproved apps e.g. BitTorrent



Gigamon Delivers Quantifiable Business Outcomes

NETWORK SECURITY & PERFORMANCE

70% **50%**

↓ ↓

Reduction in False Positives Reduction in Network Downtime

NETWORK VISIBILITY & COST

75% **50%**

↑ ↓

Increase in Network Visibility Reduction in Costs

BUSINESS AGILITY & COMPLEXITY

INCREASE **DECREASE**

↑ ↓

Increase in Business Agility Decrease in Infrastructure Complexity

“ ESG customer interviews and conversations with industry analysts have consistently shown that the Gigamon platform is a critical tool for success in today’s digital age.



Environmental, Social & Governance

Obtained by UndeadFOIA

From: (b)(6)
To: (b)(6)
Subject: Last ECP
Date: Tuesday, May 29, 2018 2:36:19 PM
Attachments: (b)(4), (b)(6).docx
(b)(4), (b)(6).docx

For your reference, these are the two docs.

—
(b)(6)@gatech.edu

Georgia Institute of Technology

(b)(6)

Obtained by UndeadFOIA

Obtained by UndeadFOIA

(b)(4)

Obtained by UndeadFOIA

Obtained by UndeadFOIA

Rhamnusia's STATEMENT OF WORK

Technical Area 1		
Task 1	Data Engineering	(b)(4), (b)(7)(E), (b)(7)(F), (b)(3);50 U.S.C. § 3024(i)(1)
Description & Objective		In this task the key goal is the systematic collection, storage and exposure of the key datasets that the team will use in order to perform against all deliverables of this project. Because we expect our networks to be targets of attacks, we will re-architect, place honeypot/decoys and develop the necessary process that will help us monitor and assess the security posture of our research and operational networks involved in this project.
Phase 1	Subtask 1.1	Initial cluster setup and configuration of the data pull, push and serve operations.
	Subtask 1.2	Preliminary data collection framework setup and operational security tuning.
	Subtask 1.3	(b)(4)
Phase 2	Subtask 1.1	Continues data pull, push and serve operations.
	Subtask 1.2	Continues data collection framework maintain and operational security monitoring.
Phase 3	Subtask 1.1	Continues data pull, push and serve operations.
	Subtask 1.2	Continues data collection framework maintain and operational security monitoring.
Deliverables		Documentation
Milestone		<p>1.1.a) Start Date: November 2016, End Date: December 2016. (b)(4) (b)(4)</p> <p>1.1.b) Start Date: November 2016, End Date: December 2016. Begin the transfer of historic network datasets, for initial attribution analysis.</p> <p>1.1.c) Start Date: November 2016, End Date: May 2018. (b)(4) (b)(4)</p> <p>1.2.a) Start Date: February 2017, End Date: June 2017. (b)(4) (b)(4)</p> <p>1.2.b) Start Date: March 2017, End Date: June 2017. (b)(4) (b)(4)</p> <p>1.2.c) Start Date: March 2017, End Date: June 2017. (b)(4) (b)(4) (b)(4)</p> <p>1.3.a) Start Date: February 2017, End Date: April 2017. Cloud based development of the API prototypes while we order the hardware to implement the API at GT owned physical rack space.</p> <p>1.3.b) Start Date: March 2017, End Date: August 2017. (b)(4) (b)(4)</p>

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Rhamnousia's STATEMENT OF WORK

	(b)(4)	
	1.3.c) Start Date: August 2017, End Date: February 2018. (b)(4)	
	(b)(4)	
Task 2	Signal Analysis	(b)(4)
Description & Objective	With this task we will investigate a series of algorithms that will help us reason about network attacks with the respect of attribution. The first approach will be statistical, where we will investigate what class of statistical learning methods will assist us in attribution reasoning. At the same time we will measure the signal quality that various network and system datasets often yields in an attack attribution context. Finally, we will examine in the context of forensic analysis how we can efficiently reconstruct attack path in a post mortem environment.	
Phase 1	Subtask 2.1	Preliminary Research on Edge Flavor Taxonomy.
	Subtask 2.2	Preliminary Tensor Analysis and Statistical Learning Algorithm Analysis.
	Subtask 2.3	Initial Statistical Feature Analysis and Information Gain on Ground Truth.
	Subtask 2.4	Initial Data Reduction and Signal Enrichment.
Phase 2	Subtask 2.1	Alpha-level Research on Edge Flavor Taxonomy.
	Subtask 2.2	Alpha-level Tensor Analysis and Statistical Learning Algorithm Analysis.
	Subtask 2.3	Alpha-level Statistical Feature Analysis and Information Gain on Ground Truth.
	Subtask 2.4	Alpha-level Data Reduction and Signal Enrichment.
Phase 3	Subtask 2.1	Final Research on Edge Flavor Taxonomy.
	Subtask 2.2	Final Tensor Analysis and Statistical Learning Algorithm Analysis.
	Subtask 2.3	Final Statistical Feature Analysis and Information Gain on Ground Truth.
	Subtask 2.4	Final Data Reduction and Signal Enrichment.
Deliverables	Documentation, machine learning code and models	
Milestone	<p>2.1.a) Start Date: February 2017, End Date: April 2017. Develop application program interface (API) for intra-team data sharing.</p> <p>2.1.b) Start Date: December 2016, End Date: May 2017. Intra-team code integration and API update.</p> <p>2.1.c) Start Date: December 2016, End Date: June 2017. Sinkhole, DDoS and HTTP data analysis.</p> <p>2.2.a) Start Date: July 2017, End Date: August 2017. Porting and Testing of tensor algorithms into SPARK.</p> <p>2.2.b) Start Date: August 2017, End Date: October 2017. Initial tensor decomposition and unsupervised learning experimentation.</p> <p>2.2.c) Start Date: August 2017, End Date: October 2017. Initial tensor and spectral modeling and attack forecasting efforts.</p> <p>2.3.a) Start Date: May 2017, End Date: February 2018. (b)(4)</p> <p>(b)(4)</p>	

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Rhamnousia's STATEMENT OF WORK

	<p>2.3.b) Start Date: September 2017, End Date: February 2018. Preliminary Information Gain (IG) analysis and model selection.</p> <p>2.4.a) Start Date: March 2018, End Date: May 2018. Cross network protocol temporal signal decomposition.</p> <p>2.4.b) Start Date: January 2018, End Date: May 2018. (b)(4)</p> <p>(b)(4)</p> <p>2.4.c) Start Date: February 2018, End Date: May 2018. Cross network protocol signal deduplication.</p>
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Technical Area 1		
Task 3	Link and Causality Analysis	(b)(4)
Description & Objective	(b)(4)	
	(b)(4)	At the same time we will develop causality reasoning algorithms able to digest large diverse dataset and reconstruct attribution graphs. Finally, we will develop processes that will be able to fingerprint a network environment according to the IoT devices in the remote network.
Phase 1	Subtask 3.1	Initial attribution analysis of historic attacks and event-based link reasoning.
	Subtask 3.2	Preliminary network infrastructure and attack causality analysis.
	Subtask 3.3	Preliminary Device identification and Internet of Things (IoT) network profiling.
Phase 2	Subtask 3.1	Alpha-level attribution analysis of historic attacks and event-based link reasoning.
	Subtask 3.2	Alpha-level network infrastructure and attack causality analysis.
	Subtask 3.3	Alpha-level Device identification and Internet of Things (IoT) network profiling.
Phase 3	Subtask 3.1	Final attribution analysis of historic attacks and event-based link reasoning.
	Subtask 3.2	Final network infrastructure and attack causality analysis.
	Subtask 3.3	Final Device identification and Internet of Things (IoT) network profiling.
Deliverables	Documentation, code and (b)(4)	
Milestone	<p>3.1.a) Start Date: September 2017, End Date: December 2017. Knowledge Based Generation of Historic Threats.</p> <p>3.1.b) Start Date: September 2017, End Date: December 2017. (b)(4)</p> <p>(b)(4)</p> <p>3.1.c) Start Date: September 2017, End Date: December 2017. Cross Protocol Threat Risk Analysis.</p> <p>3.2.a) Start Date: April 2017, End Date: December 2017. Cross Protocol and Multi Network Event Causality Analysis.</p> <p>3.2.b) Start Date: January 2017, End Date: December 2017. (b)(4)</p>	

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Rhamnousia's STATEMENT OF WORK

	<p>Causality Analysis. 3.3.c) Start Date: November 2017, End Date: May 2018. Causality Analysis in Historic Cyber Attacks.</p> <p>3.3.a) Start Date: December 2016, End Date: March 2018. (b)(4) (b)(4) Identification.</p> <p>3.3.b) Start Date: December 2017, End Date: April 2018. IoT Network Environment Fingerprint and War-Driving.</p> <p>3.3.c) Start Date: December 2016, End Date: March 2018. (b)(4) (b)(4)</p>
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Technical Area 1		
Task 5	Data Enrichment, Threat Reports, and Public Attribution	(b)(4)
Description & Objective	Through this task we will develop the necessary processes that will help us share various intelligence and modeling results with the various performers in the program. In the same task we will develop the necessary processes and infrastructure that will enable the systematic open source intelligence collection. These processes and datasets will be constantly enriched by the periodic feedback we will have with the rest of the teams and the program manager.	
Phase 1	Subtask 5.1	Initial information feedback loop and cross team process integration
	Subtask 5.4	Prototype active domain name system interrogation system
Phase 2	Subtask 5.1	Alpha-level information feedback loop and cross team process integration
	Subtask 5.4	Alpha-level active domain name system interrogation system
Phase 3	Subtask 5.1	Final information feedback loop and cross team process integration
	Subtask 5.4	Final active domain name system interrogation system
Deliverables	Code, threat feeds and active domain name system (DNS) datasets	
Milestone	5.1.a) Start Date: March 2017, End Date: August 2017. Architectural debrief and coordination with program manager. 5.1.b) Start Date: August 2017, End Date: September 2017. Signal requirements feedback loop between classified and unclassified environments. 5.1.c) Start Date: September 2017, End Date: January 2018. Performers cross pollination and API specifications. 5.4.a) Start Date: January 2017, End Date: May 2017. (b)(4) (b)(4) 5.4.b) Start Date: June 2017, End Date: August 2017. Distributed Multi-type DNS and DNSSEC Scanning Engine 5.4.c) Start Date: February 2017, End Date: April 2017. Water-holing Web-Crawling Engine 5.4.d) Start Date: February 2018, End Date: April 2018. Public Exposure of Raw Network Data	
Task 6	Development, Quality Assurance and Packaging	(b)(4)

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Rhamnousia's STATEMENT OF WORK

Description & Objective		In this task the participants in our project will have to work with the Georgia Tech Research Institute team to translate the proof of concept (POC) code into (b)(4). This "tech-transfer" process will include testing, code coverage and continues integration efforts throughout the project. Our goal here is to minimize the risk of potential code portability issues between the Georgia Tech networks and any other (potentially classified) networks that the Rhamnousia framework will need to be deployed.
Phase 1	Subtask 6.1	Initial development of (b)(4)
	Subtask 6.2	Initial development of tensors methods, and forecasting engines
	Subtask 6.4	Initial link causality analysis system
	Subtask 6.5	Initial signal analysis and cross protocol enrichment systems
Phase 2	Subtask 6.1	Alpha-level development of (b)(4)
	Subtask 6.2	Alpha-level development of tensors methods, and forecasting engines
	Subtask 6.4	Alpha-level link causality analysis system
	Subtask 6.5	Alpha-level signal analysis and cross protocol enrichment systems
Phase 3	Subtask 6.1	Version 1.0 (b)(4)
	Subtask 6.2	Version 1.0 tensors methods, and forecasting engines
	Subtask 6.4	Version 1.0 link causality analysis system
	Subtask 6.5	Version 1.0 signal analysis and cross protocol enrichment systems
Deliverables		Documentation, code, packages and code repository history
Milestone		<p>ALL SUBTASKS: Start Date: January 2017, End Date: May 2018</p> <p>6.1.a) Packaging of proof of concept code. 6.1.b) Quality assurance and code review. 6.1.c) Continue integration according to feedback from the program.</p> <p>6.2.a) Packaging of proof of concept code. 6.2.b) Quality assurance and code review. 6.2.c) Continue integration according to feedback from the program.</p> <p>6.4.a) Packaging of proof of concept code. 6.4.b) Quality assurance and code review. 6.4.c) Continue integration according to feedback from the program.</p> <p>6.5.a) Packaging of proof of concept code. 6.5.b) Quality assurance and code review. 6.5.c) Continue integration according to feedback from the program.</p>

Rhamnousia's STATEMENT OF WORK

Technical Area 3		
Task 1	Data Engineering	Georgia Tech, Georgia Tech Research Institute
Description & Objective		(b)(4)
Phase 1	Subtask 1.3	Design and development of core application program interfaces (APIs)
Phase 2	Subtask 1.3	Update, support and enrichment of core application program interfaces (APIs)
Phase 3	Subtask 1.3	Finalization of core application program interfaces (APIs)
Deliverables		Code and Application program interfaces (APIs)
Milestone		1.3.a) Start Date: November 2016, End Date: February 2017. (b)(4) (b)(4) 1.3.b) Start Date: February 2017, End Date: May 2017. (b)(4) (b)(4)
Task 4	Data Reduction and Modeling	Georgia Tech, Georgia Tech Research Institute
Description & Objective		(b)(4)
Phase 1	Subtask 4.1	Preliminary operational ground truth validation of public attacks
	Subtask 4.2	Public attack attribution of historic attacks reports
	Subtask 4.3	(b)(4)
	Subtask 4.4	(b)(4)
Phase 2	Subtask 4.1	Alpha-level operational ground truth validation of public attacks
	Subtask 4.2	Public attack attribution of historic attacks reports
	Subtask 4.3	(b)(4)
	Subtask 4.4	(b)(4)
Phase 3	Subtask 4.1	Final operational ground truth validation of public attacks
	Subtask 4.2	Public attack attribution of historic attacks reports
	Subtask 4.3	(b)(4)
	Subtask 4.4	(b)(4)
Deliverables		Detection and attribution reports.
Milestone		4.1.a) Start Date: April 2017, End Date: June 2017. (b)(4) (b)(4) (b)(4) 4.1.b) Start Date: October 2017, End Date: January 2018. (b)(4) (b)(4) 4.1.c) Start Date: September 2017, End Date: December 2017. (b)(4) (b)(4)

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Rhamnousia's STATEMENT OF WORK

<p>4.2.a) Start Date: June 2017, End Date: October 2017. (b)(4) (b)(4)</p> <p>4.2.b) Start Date: September 2017, End Date: February 2018. (b)(4) (b)(4)</p> <p>4.2.c) Start Date: September 2017, End Date: February 2018. (b)(4) (b)(4)</p> <p>4.2.d) Start Date: December 2017, End Date: May 2018. Threat Console For Open Public Attribution.</p> <p>4.3.a) Start Date: October 2017, End Date: January 2018. Domain Graveyard Creation and Sinkhole Generation.</p> <p>4.3.b) Start Date: October 2017, End Date: January 2018. (b)(4) (b)(4)</p> <p>4.3.c) Start Date: October 2017, End Date: January 2018. (b)(4) (b)(4)</p> <p>4.4.a) Start Date: February 2017, End Date: April 2017. (b)(4) (b)(4)</p> <p>4.4.b) Start Date: February 2017, End Date: April 2017. (b)(4) (b)(4)</p> <p>4.4.c) Start Date: June 2017, End Date: April 2018. (b)(4) Analysis.</p> <p>4.4.d) Start Date: June 2017, End Date: May 2018. (b)(4) (b)(4)</p>
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Technical Area 3		
Task 5	Data Enrichment, Threat Reports, and Public Attribution	Georgia Tech, Georgia Tech Research Institute
Description & Objective	Through this task we will develop the necessary processes that will help us share various intelligence and modeling results with the various performers in the program. In the same task we will develop the necessary processes and infrastructure that will enable the systematic open source intelligence collection. These processes and datasets will be constantly enriched by the periodic feedback we will have with the rest of the teams and the program manager.	
Phase 1	Subtask 5.2	Preliminary information signal normalization
	Subtask 5.3	Initial research and design of open threat intelligence data repository
Phase 2	Subtask 5.2	Alpha-level information signal normalization
	Subtask 5.3	Alpha-level research and design of open threat intelligence data repository
Phase 3	Subtask 5.2	Final information signal normalization
	Subtask 5.3	Final research and design of open threat intelligence data repository
Deliverables	Code and attribution reports	
Milestone	<p>5.2.a) Start Date: August 2017, End Date: September 2017. Code Portability Requirement.</p> <p>5.2.b) Start Date: November 2017, End Date: December 2017. Data and Model Summarization For Shipping Them Alongside the Code.</p>	

Obtained by UndeadFOIA

Rhamnousia's STATEMENT OF WORK

		<p>5.2.c) Start Date: November 2017, End Date: May 2018. Obfuscated Synthetic red-space test-case generation for code quality and performance assurance.</p> <p>5.3.a) Start Date: September 2017, End Date: May 2018. Public black lists and threat exchange-clearing house.</p> <p>5.3.b) Start Date: June 2017, End Date: December 2017. Dynamic Analysis of malware and low Reputation Zones.</p> <p>5.3.c) Start Date: January 2017, End Date: December 2017. (b)(4) (b)(4)</p>
Task 6	Development, Quality Assurance and Packaging	Georgia Tech, Georgia Tech Research Institute
Description & Objective	In this task the participants in our project will have to work with the Georgia Tech Research Institute team to translate the proof of concept (POC) code into robust Debian packages. This "tech-transfer" process will include testing, code coverage and continues integration efforts throughout the project. Our goal here is to minimize the risk of potential code portability issues between the Georgia Tech networks and any other (potentially classified) networks that the Rhamnousia framework will need to be deployed.	
Phase 1	Subtask 6.3	Initial development of data reduction and enrichment algorithms
	Subtask 6.6	Initial open source intelligence data collection system
Phase 2	Subtask 6.3	Alpha-level development of data reduction and enrichment algorithms
	Subtask 6.6	Alpha-level open source intelligence data collection system
Phase 3	Subtask 6.3	Version 1.0 data reduction and enrichment algorithms
	Subtask 6.6	Version 1.0 open source intelligence data collection system
Deliverables	Documentation, code, packages and code repository history	
Milestone	ALL SUBTASKS: Start Date: January 2017, End Date: May 2018	
	6.3.a) Packaging of proof of concept code. 6.3.b) Quality Assurance and Code Review. 6.3.c) Continue Integration According to Feedback From The Program.	
	6.6.a) Packaging of proof of concept code. 6.6.b) Quality Assurance and Code Review. 6.6.c) Continue Integration According to Feedback From The Program.	

From: (b)(6)
To:
Cc:
Subject: latest EA program review slides
Date: Thursday, June 14, 2018 8:38:57 AM
Attachments: [2018_05_09_I2O_EA_Program_Review_v3.pptx](#)

V/r,

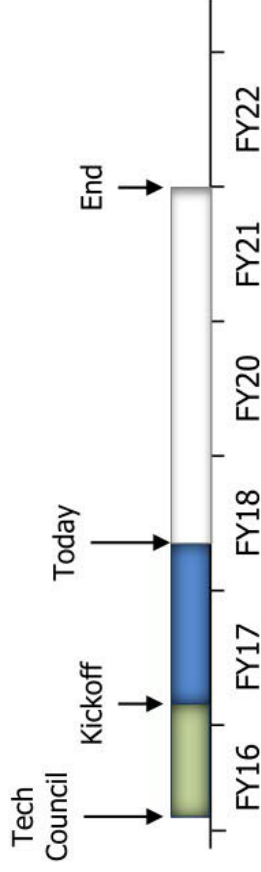
(b)(6)

Office: (b)(6)

Cell: (b)(6)

Enhanced Attribution (EA) Program Review

(b)(6)



Mr. Brian Pierce
Director, Information Innovation Office (I2O)

June 2018



(b)(4), (b)(5), (b)(7)(E), (b)(3):10 USC 130e



www.darpa.mil

From: (b)(6)
To: (b)(6)
Subject: New EA highlights slides
Date: Tuesday, December 4, 2018 3:10:01 PM
Attachments: [20180802-EA-highlights v3.pptx](#)

(b)(6)

Here is what I came up with for the new highlight reel. This is how I organized the flow of the presentation:

- Program level overview
- Demonstration of Capability- Proof of Concept (manual analysis case studies)
- Development/progression of tools and techniques
- Demonstration of Capability- Automation
- Transition

If you like this flow, we can start from here and add or delete pending the audience and how long we want to go.

V/r,

(b)(6)

(b)(6)

(office)
(cell)

Enhanced Attribution

(b)(6)

Program Manager
Information Innovation Office (I2O)



Obtained by UndeadFOIA



Demonstration of Capability- Proof of Concept



Development/Progression of Tools and Techniques



Demonstration of Capability- Automation



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From: (b)(6)
To:
Subject: new slides
Date: Friday, June 3, 2022 4:21:24 PM
Attachments: [Constellation v9.1.pptx](#)

V/r,

(b)(6)

(b)(6)

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(b)(6)
(office)
(cell)

(b)(5), (b)(6), (b)(7)(E), (b)(3); 10 USC 130e

(b)(5), (b)(7)(E), (b)(3); 10 USC 130e

(b)(5), (b)(7)(E), (b)(3); 10 USC 130e

(b)(5), (b)(7)(E), (b)(3); 10 USC 130e

(b)(5), (b)(7)(E), (b)(3); 10 USC 130e

(b)(5), (b)(6), (b)(7)(E), (b)(3); 10 U.S.C. § 130b, (b)(3); 10 USC 130e

(b)(5), (b)(7)(E), (b)(3); 10 USC 130e

(b)(5), (b)(7)(E), (b)(3); 10 USC 130e

(b)(5), (b)(7)(E), (b)(3); 10 USC 130e

(b)(5), (b)(7)(E), (b)(3); 10 USC 130e

(b)(5), (b)(7)(E), (b)(3); 10 USC 130e

(b)(5), (b)(7)(E), (b)(3); 10 USC 130e

(b)(5), (b)(6), (b)(7)(E), (b)(3); 10 USC 130e

(b)(5), (b)(6), (b)(7)(E), (b)(3); 10 USC 130e

(b)(5), (b)(6), (b)(7)(E), (b)(3); 10 USC 130e

(b)(5), (b)(6), (b)(7)(E), (b)(3); 10 USC 130e

(b)(5), (b)(7)(E), (b)(3); 10 USC 130e

(b)(5), (b)(6), (b)(7)(E), (b)(3); 10 USC 130e

(b)(5), (b)(7)(E), (b)(3); 10 USC 130e

(b)(6)

(b)(3):50
U.S.C.
3605
Section 6
Public
Law 86-3

Subject: [redacted]
Location: 675 09-500 Small Conference Room (TS/SAP/SCI)

Start: Tue 7/19/2022 1:00 PM
End: Tue 7/19/2022 3:30 PM
Show Time As: Tentative

Recurrence: (none)

Meeting Status: Not yet responded

Organizer: [redacted]
Required Attendees: [redacted] [redacted] (b)(6)

Resources: [redacted] (b)(6)
675 09-500 Small Conference Room (TS/SAP/SCI)

(b)(3):50
U.S.C.
3605
Section 6
Public
Law 86-3

Proposed Agenda:

- 1300-1345: [redacted] (b)(6) portfolio
- 1345-1430: [redacted] (b)(6) portfolio
- 1430- 1515: [redacted] (b)(6) portfolio
- 1515-1530: Discussion

PM's feel free to attend all or just your portion

Visitor Information:
<https://www.darpa.mil/policy/visitor-information>

From: (b)(4), (b)(6)
To: (b)(6)
Cc: (b)(4), (b)(6)
Subject: Re: (b)(4)
Date: Monday, October 22, 2018 7:03:51 PM

lol

(b)(4), (b)(6)

From: (b)(6)@darpa.mil>
Sent: Monday, October 22, 2018 7:01:57 PM
To: (b)(4), (b)(6)
Cc:
Subject: Re: (b)(4)

(b)(4), (b)(3):50 U.S.C. 3605 Section 6 Public Law 86-36

> On Oct 22, 2018, at 5:29 PM, (b)(4), (b)(6) wrote:

> (b)(4)

> (b)(4), (b)(6)

> From: (b)(4), (b)(6)
> Sent: Monday, October 22, 2018 5:20:34 PM
> To: (b)(4), (b)(6)
> Cc: (b)(6), (b)(4), (b)(6)
> Subject: Re: (b)(4)

> (b)(6)

> (b)(4)

> Regards,

(b)(4), (b)(6)

> On Mon, Oct 22, 2018 at 5:18 PM (b)(4), (b)(6) wrote:

(b)(4)

Obtained by UndeadFOIA

>

(b)(4)

>

> —

(b)(4), (b)(6)

>

Obtained by UndeadFOIA

From: (b)(6)
To: (b)(4), (b)(6)
Cc: (b)(4), (b)(6)
Subject: Re: (b)(4)
Date: Wednesday, October 24, 2018 7:32:02 PM

That info is NOFORN

> On Oct 24, 2018, at 7:25 PM, (b)(4), (b)(6) wrote:

>
> (b)(6)

> ---
> (b)(4), (b)(6)

> From: (b)(6)@darpa.mil>

> Sent: Wednesday, October 24, 2018 7:23:12 PM

> To: (b)(4), (b)(6)

> Cc: (b)(4), (b)(6); (b)(4), (b)(6); (b)(6)

> Subject: Re: (b)(4)

(b)(4), (b)(6)

> (b)(4), (b)(6)

> On Oct 23, 2018, at 5:37 PM, (b)(4), (b)(6) wrote:

(b)(4), (b)(6)

> Concur (with _____ not _____).

> ---
> (b)(4), (b)(6)

> On Tue, Oct 23, 2018 at 5:36 PM (b)(4), (b)(6) wrote:

> I hate you.

> ---
> (b)(4), (b)(6)

Obtained by UndeadFOIA

>
> From: (b)(6)@darpa.mil<mailto:(b)(6)@darpa.mil>>
> Sent: Tuesday, October 23, 2018 5:34:09 PM
> To: (b)(4), (b)(6)
> Cc: (b)(6), (b)(4), (b)(6)
> Subject: Re: (b)(4)
>
> Run with it.
>
>> On Oct 23, 2018, at 5:31 PM, (b)(4), (b)(6) wrote:
>> (b)(6) (b)(4)
>>
>> (b)(4)
>>
>> Thanks,
>>
>> —
>> (b)(4), (b)(6)
>>
>

From: (b)(6)
To: (b)(6)
Cc: (b)(6)
Subject: RE: Constellation draft pitch deck
Date: Tuesday, February 22, 2022 4:15:17 PM
Attachments: [Constellation Proposer Day v2.pptx](#)

Sorry, new new version, use this one

V/r,

(b)(6)
(b)(6) @darpa.mil
(b)(6) @darpa.ic.gov
(b)(6) (office)
(b)(6) (cell)

-----Original Message-----

From: (b)(6)
Sent: Tuesday, February 22, 2022 4:12 PM
To: (b)(6) @darpa.mil>
Cc: (b)(6) @darpa.mil>
Subject: RE: Constellation draft pitch deck

New version

V/r,

(b)(6)
(b)(6) @darpa.mil
(b)(6) @darpa.ic.gov
(b)(6) (office)
(b)(6) (cell)

-----Original Message-----

From: (b)(6)
Sent: Tuesday, February 22, 2022 2:10 PM
To: (b)(6) @darpa.mil>
Cc: (b)(6) @darpa.mil>
Subject: Constellation draft pitch deck

(b)(6)

Here is a draft slide deck for our Constellation pitch. I think we can pull a couple slides from here to use for the CIO. Let me know what you think.

(b)(6)

Feel free to help clean these up or add in any edits/suggestions that you may have.

V/r,

(b)(6)

(b)(6)

@darpa.mil

@darpa.ic.gov

(b)(6)

(office)

(cell)

Obtained by UndeadFOIA

(b)(5), (b)(6), (b)(3):10 USC 130e

Obtained by UndeadFOIA

(b)(5), (b)(7)(E), (b)(3);10 USC 130e

Obtained by UndeadFOIA

(b)(5), (b)(7)(E), (b)(3);10 USC 130e

Obtained by UndeadFOIA

(b)(5), (b)(7)(E), (b)(3);10 USC 130e

Obtained by UndeadFOIA

(b)(5), (b)(7)(E), (b)(3);10 USC 130e

Obtained by UndeadFOIA

(b)(5), (b)(7)(E), (b)(3);10 USC 130e

Obtained by UndeadFOIA

(b)(5), (b)(7)(E), (b)(3);10 USC 130e

Obtained by UndeadFOIA

(b)(5), (b)(7)(E), (b)(3);10 USC 130e

Obtained by UndeadFOIA

(b)(5), (b)(7)(E), (b)(3);10 USC 130e

Obtained by UndeadFOIA

(b)(5), (b)(7)(E), (b)(3);10 USC 130e

Obtained by UndeadFOIA

(b)(5), (b)(7)(E), (b)(3);10 USC 130e

Obtained by UndeadFOIA

(b)(5), (b)(7)(E), (b)(3);10 USC 130e

Obtained by UndeadFOIA

(b)(5), (b)(7)(E), (b)(3);10 USC 130e

From: (b)(6)
To:
Cc:
Subject: RE: Constellation draft pitch deck
Date: Tuesday, February 22, 2022 4:12:32 PM
Attachments: [Constellation Proposer Day v2.pptx](#)

New version

V/r,

(b)(6)
(b)(6) @darpa.mil
(b)(6) @darpa.ic.gov
(b)(6) (office)
(b)(6) (cell)

-----Original Message-----

From: (b)(6)
Sent: Tuesday, February 22, 2022 2:10 PM
To: (b)(6) @darpa.mil>
Cc: (b)(6) @darpa.mil>
Subject: Constellation draft pitch deck

(b)(6)

Here is a draft slide deck for our Constellation pitch. I think we can pull a couple slides from here to use for the CIO. Let me know what you think.

(b)(6)

Feel free to help clean these up or add in any edits/suggestions that you may have.

V/r,

(b)(6) @darpa.mil
(b)(6) @darpa.ic.gov
(b)(6) (office)
(b)(6) (cell)

(b)(5), (b)(6), (b)(7)(E), (b)(3); 10 USC 130e

(b)(5), (b)(7)(E), (b)(3); 10 USC 130e

(b)(5), (b)(7)(E), (b)(3); 10 USC 130e

(b)(5), (b)(7)(E), (b)(3); 10 USC 130e

(b)(5), (b)(7)(E), (b)(3); 10 USC 130e

(b)(5), (b)(7)(E), (b)(3); 10 USC 130e

(b)(5), (b)(7)(E), (b)(3); 10 USC 130e

(b)(5), (b)(7)(E), (b)(3); 10 USC 130e

(b)(5), (b)(7)(E), (b)(3); 10 USC 130e

(b)(5), (b)(7)(E), (b)(3); 10 USC 130e

(b)(5), (b)(7)(E), (b)(3); 10 USC 130e

(b)(5), (b)(7)(E), (b)(3); 10 USC 130e

(b)(5), (b)(7)(E), (b)(3); 10 USC 130e

Obtained by UndeadFOIA

From: (b)(6)
To: (b)(6)
Subject: RE: CPB Briefing
Date: Monday, November 23, 2020 11:07:32 AM

(b)(6)

Good catch, I assumed it was going to be Teams. I reached out to (b)(6) (b)(6) to see about getting a Teams dial-in. It will be unclass

V/r,

(b)(6)

(b)(6) (office)
(b)(6) (cell)

-----Original Message-----

From: (b)(6)@darpa.mil>
Sent: Monday, November 23, 2020 9:38 AM
To: (b)(6)@darpa.mil>; (b)(6)@darpa.mil>; (b)(6)@darpa.mil>; (b)(6)@darpa.mil>; (b)(6)@darpa.mil>
Subject: RE: CPB Briefing

Looks like this invite for Dec 2 is still for an in-person meeting. Is it unclass and going to be a MS Teams call? If it needs to go classified, I have reserved 07-500.

-----Original Message-----

From: (b)(6) USARMY CYBER PRO BDE (USA)
(b)(6)@mail.mil>
Sent: Thursday, November 12, 2020 1:17 PM
To: (b)(6)@darpa.mil>
Cc: (b)(6)@darpa.mil>; (b)(6)@darpa.mil>; (b)(6)@darpa.mil>; (b)(6)@darpa.mil>; (b)(6)@darpa.mil>
Subject: RE: CPB Briefing

(b)(6)

(b)(5)

(b)(5)

Respectfully,

(b)(6)

From: (b)(6)@darpa.mil]
Sent: Thursday, November 12, 2020 12:23 PM
To: (b)(6) USARMY CYBER PRO BDE (USA)
Cc: (b)(6)
(b)(6)
Subject: CPB Briefing

(b)(6)

We have multiple threads going on about this brief to (b)(6) on 02 Dec. Since all of us work closely together, to avoid confusion and help with coordination, let's start a new thread. As we discussed on Teams, 02 December looks like a good day. I would propose a 2-hr window to brief EA and CHASE back to back from 1400-1600.

Proposed Agenda:

1400-1500: CHASE
1500-1600: EA

I am happy to set this up via Teams, let me know if you would like us to handle the meeting logistics or if the CPB will do that.

BREAK

(b)(6)

Please mention this to (b)(6) and see if she would like to attend as well. I know she has been actively involved in previous engagements.

V/r,

(b)(6)

(b)(6)

Office: (b)(6)

Mobile:

NSTS: (b)(6)

(b)(6)

@darpa.mil

@darpa.ic.gov

Obtained by UndeadFOIA

From: (b)(6)
To: (b)(6) [USARMY CYBER PRO BDE \(USA\)](#)
Cc: (b)(6)
Subject: RE: CPB Briefing
Date: Monday, November 23, 2020 11:06:34 AM

(b)(6)

We got the invite for the 02 Dec mtg but no dial in or VTC instructions. Is the CPB setting that up or do we need to create a Teams dial in?

V/r,

(b)(6)
(b)(6) (office)
(b)(6) (cell)

-----Original Message-----

From: (b)(6) [USARMY CYBER PRO BDE \(USA\)](#)
(b)(6)@mail.mil
Sent: Thursday, November 12, 2020 1:17 PM
To: (b)(6)@darpa.mil
Cc: (b)(6)@darpa.mil; (b)(6)
(b)(6)@darpa.mil; (b)(6)@darpa.mil; (b)(6)
(b)(6)@darpa.mil; (b)(6)
(b)(6)@darpa.mil
Subject: RE: CPB Briefing

(b)(6)

(b)(5)

(b)(5)

Respectfully,

(b)(6)

From: (b)(6)@darpa.mil]
Sent: Thursday, November 12, 2020 12:23 PM
To: (b)(6) USARMY CYBER PRO BDE (USA)
Cc: (b)(6)
(b)(6)
Subject: CPB Briefing

(b)(6)

We have multiple threads going on about this brief to (b)(6) on 02 Dec. Since all of us work closely together, to avoid confusion and help with coordination, let's start a new thread. As we discussed on Teams, 02 December looks like a good day. I would propose a 2-hr window to brief EA and CHASE back to back from 1400-1600.

Proposed Agenda:

1400-1500: CHASE
1500-1600: EA

I am happy to set this up via Teams, let me know if you would like us to handle the meeting logistics or if the CPB will do that.

BREAK

(b)(6)

Please mention this to (b)(6) and see if she would like to attend as well. I know she has been actively involved in previous engagements.

V/r,

(b)(6)

Office: (b)(6)
Mobile: (b)(6)

NSTS: (b)(6)

(b)(6)

@arpa.mil

@arpa.ic.gov

Obtained by UndeadFOIA

From: (b)(6)
To: (b)(6) [USARMY ARCYBER \(USA\)](#)
Cc: (b)(6)
Subject: RE: draft ARCYBER MOA (UNCLASSIFIED)
Date: Thursday, March 17, 2022 8:09:52 AM

(b)(6)

Happy to add an ARCYBER LNO/SETA or whatever position you all want to commit to. USCC had issues with that so it got removed. I'll fix the Marine language. Everything else look good?

That would be a disappointment if you were not the Rep for this, perhaps (b)(6) can make a request- assuming you want to continue. . .

V/r,

(b)(6)

(b)(6) (office)
(b)(6) (cell)
(b)(6) (NSTS)

-----Original Message-----

From: (b)(6) [USARMY ARCYBER \(USA\)](#)
<(b)(6)@army.mil>
Sent: Wednesday, March 16, 2022 8:46 PM
To: (b)(6)@darpa.mil>
Cc: (b)(6)@darpa.mil>
Subject: RE: draft ARCYBER MOA (UNCLASSIFIED)

CLASSIFICATION: UNCLASSIFIED

(b)(5)

(b)(6)

-----Original Message-----

From: (b)(6)@darpa.mil>
Sent: Monday, March 14, 2022 1:22 PM
To: (b)(6) [USARMY ARCYBER \(USA\)](#)
<(b)(6)@army.mil>
Cc: (b)(6)@darpa.mil>
Subject: RE: draft ARCYBER MOA (UNCLASSIFIED)

(b)(6)

Just don't start adding (Sel) to your signature block. Lol

Yes, I tried to make them generic. (b)(6) (MARFOR), (b)(6)

(JCW), and 16AF are reviewing very similar ones

V/r,

(b)(6)
(b)(6) @darpa.mil
(b)(6) @darpa.ic.gov
(b)(6) (office)
(b)(6) (cell)

-----Original Message-----

From: (b)(6) USARMY ARCYBER (USA)
<(b)(6) @army.mil>
Sent: Monday, March 14, 2022 1:14 PM
To: (b)(6) @darpa.mil>
Cc: (b)(6) @darpa.mil>
Subject: RE: draft ARCYBER MOA (UNCLASSIFIED)

CLASSIFICATION: UNCLASSIFIED

(b)(6)
(b)(5)
(b)(6)

-----Original Message-----

From: (b)(6) @darpa.mil>
Sent: Monday, March 14, 2022 1:06 PM
To: (b)(6) USARMY ARCYBER (USA)
<(b)(6) @army.mil>
Cc: (b)(6) @darpa.mil>
Subject: draft ARCYBER MOA

(b)(6)

Here is the draft MOA for Constellation. Can you please forward to the group to start the review and edit process? Nothing in this MOA is set in stone. At this point, the goal is to get the MOA language to a point where ARCYBER is ready to staff. This will allow us to tell our leadership with confidence that we have an operational partner willing to support Constellation. Thanks for all your help.

I marked it CUI out of an abundance of caution, I don't think it needs to be CUI but I will leave that to Army's discretion.

V/r,

(b)(6)
(b)(6) @darpa.mil

(b)(6) @darpa.ic.gov

(b)(6) (office)

(cell)

CLASSIFICATION: UNCLASSIFIED

CLASSIFICATION: UNCLASSIFIED

From: (b)(6)
To:
Subject: RE: Hack-A-Thon after action
Date: Wednesday, November 21, 2018 1:13:17 PM

Rgr- I'll work on it

V/r,

(b)(6)
(b)(6) (cell)

-----Original Message-----

From: (b)(6)@darpa.mil>
Sent: Wednesday, November 21, 2018 1:12 PM
To: (b)(6)@darpa.mil>
Subject: Re: Hack-A-Thon after action

(b)(5)

> On Nov 21, 2018, at 12:33, (b)(6)

(b)(6)@darpa.mil> wrote:

>

> (b)(6)

>

> This is what I am planning on sending to the transition partners, let
> me know if you have any issues or changes:

>

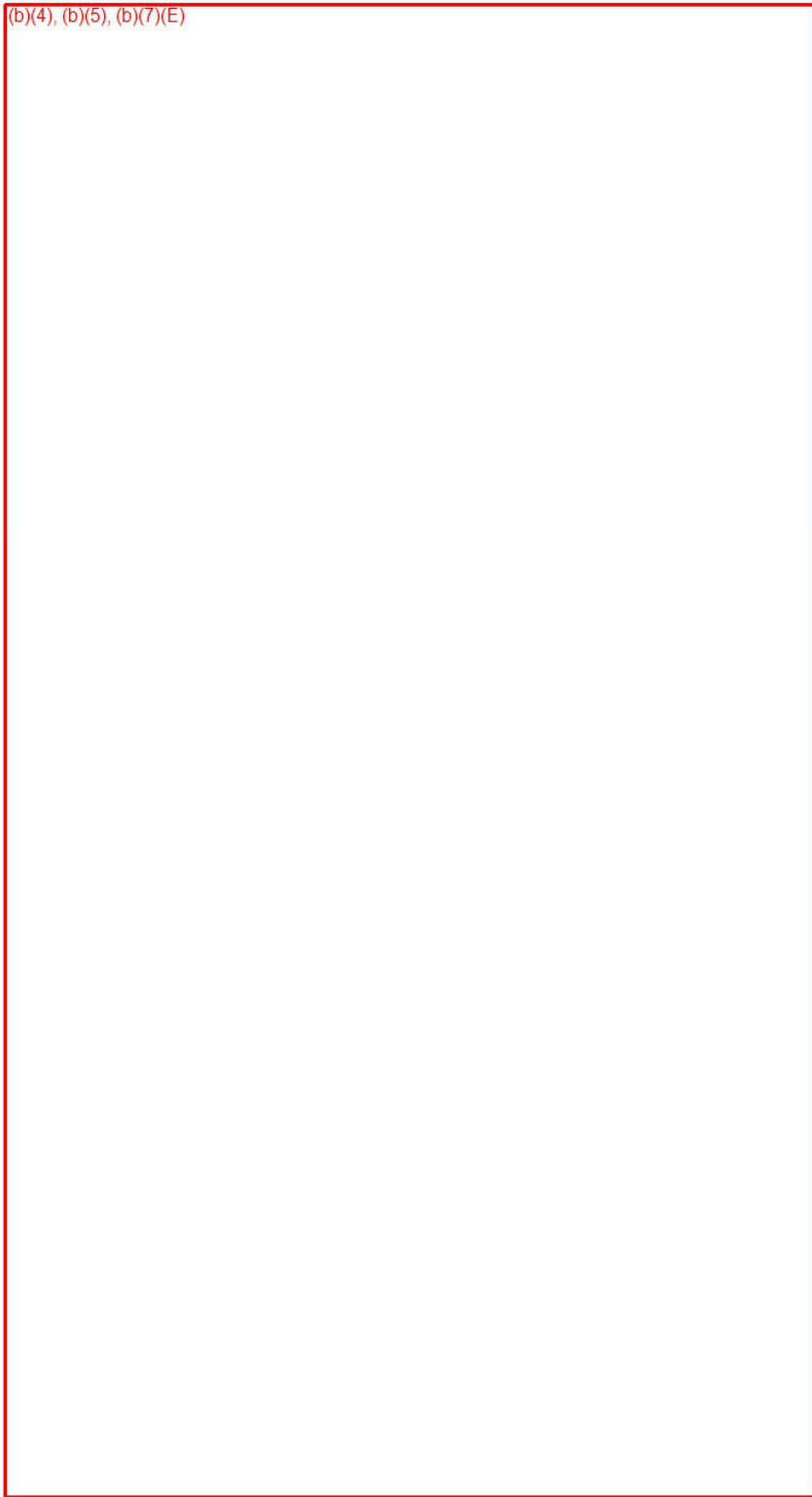
> ALCON,

>

(b)(4), (b)(5)

[Large redacted area]

(b)(4), (b)(5), (b)(7)(E)



> V/r,

>

> (b)(6)

>

> (b)(6) (cell)

>

>

>

>

> -----Original Message-----

> From: (b)(6)@gatech.edu>

> Sent: Tuesday, November 20, 2018 8:37 PM

> To: (b)(6)@darpa.mil>

> Cc:

> (b)(6)@darpa.mil>;

> (b)(6)@darpa.mil> (b)(6)

> (b)(6)@cynnovative.com) <(b)(6)@cynnovative.com>; (b)(6)

(b)(6)

> (b)(6)@kududyn.com) <(b)(6)@kududyn.com>

> Subject: Re: Hack-A-Thon after action

(b)(4), (b)(5), (b)(7)(E)

>

> (b)(6)@gatech.edu

> Georgia Institute of Technology

> (b)(6)

>

> From: (b)(6)@darpa.mil>

> Sent: Tuesday, November 20, 2018 8:28:44 PM

> To: (b)(6)

> Cc:

> (b)(6)@cynnovative.com); (b)(6)@kududyn.com)

> Subject: Re: Hack-A-Thon after action

(b)(4), (b)(5)

>

>> On Nov 20, 2018, at 17:20, (b)(6)@gatech.edu> wrote:

>>

(b)(4), (b)(5), (b)(6)

(b)(4), (b)(5), (b)(7)(E)

>> Thanks,

>>

>>

>> (b)(6)@gatech.edu

>> Georgia Institute of Technology

>> (b)(6)

>>

>>

>>

>> From: (b)(6)@darpa.mil>

>> Sent: Tuesday, November 20, 2018 4:35 PM

>> To: (b)(6)

>> Cc:

>> (b)(6)@cynnovative.com); (b)(6)@kududyn.com)

>> Subject: Re: Hack-A-Thon after action

>>

(b)(4), (b)(5), (b)(6), (b)(7)(E), (b)(3)-50 U.S.C. § 3024(i)(1)

>> On Nov 20, 2018, at 11:32, (b)(6)

>> (b)(6)@darpa.mil<mailto:(b)(6)@darpa

>> a.mil>

>> wrote:

>>

>>

>> (b)(6)

>>

(b)(4), (b)(5), (b)(7)(E)



(b)(4), (b)(5), (b)(7)(E)



(b)(4), (b)(5)

>>

>> V/r,

>>

>> (b)(6)

>>

>> (b)(6)

>>

>> (b)(6) (cell)

>>

>>

>>

Obtained by UndeadFOIA

From: (b)(6)
To:
Subject: Re: Last ECP
Date: Tuesday, May 29, 2018 2:44:43 PM
Attachments: [Proposal.txt](#)

(b)(6) this was the original proposal I sent to AFRL about this ECP. Forgot to include it in the first email. We will absolutely need something like this for this one.

—
(b)(6)@gatech.edu
Georgia Institute of Technology

(b)(6)

From: (b)(6)
Sent: Tuesday, May 29, 2018 2:36:15 PM
To: (b)(6)
Subject: Last ECP

For your reference, these are the two docs.

—
(b)(6)@gatech.edu
Georgia Institute of Technology

(b)(6)

Obtained by UndeadFOIA

Obtained by UndeadFOIA

Obtained by UndeadFOIA

From: (b)(6)
To:
Subject: Re: Monday visit
Date: Tuesday, May 1, 2018 6:34:02 PM

(b)(4), (b)(5)

> On May 1, 2018, at 17:22, (b)(6)@darpa.mil> wrote:

>

(b)(4), (b)(5), (b)(6)

>

> (b)(6)

>

>> On May 1, 2018, at 4:09 PM, (b)(4), (b)(6) wrote:

>>

>> Any news on this (b)(6)

>>

>> —

>> (b)(4), (b)(6)

>>

>>

>>

>>

>>

>>

>> From: (b)(6)@darpa.mil>

>> Sent: Wednesday, April 25, 2018 3:00:27 PM

>> To: (b)(4), (b)(6)

>> Cc: (b)(6)

>> Subject: RE: Monday visit

>>

>> Rgr, we'll see!

>>

>> (b)(6)

>> (b)(6)

>> Office: (b)(6)

>> Cell: (b)(6)

>>

>>

>> -----Original Message-----

>> From: (b)(4), (b)(6)

>> Sent: Wednesday, April 25, 2018 2:55 PM

>> To: (b)(4), (b)(6)

>> Cc: (b)(6)@darpa.mil>; (b)(6)

>> (b)(6)@darpa.mil>

>> Subject: Re: Monday visit

>>

(b)(4), (b)(5), (b)(6)

>>

>>

>>

>>

>> (b)(4), (b)(6)

>>

>> (b)(4), (b)(6)

>>

>>

>>

>> From: (b)(4), (b)(6)

>> Sent: Wednesday, April 25, 2018 2:51:21 PM

>> To: (b)(4), (b)(6)

>> Cc: (b)(6) (b)(6)

>> Subject: Re: Monday visit

>>

(b)(4), (b)(6)

>> (b)(4), (b)(5)

>> Regards,

(b)(4), (b)(6)

>> (b)(4), (b)(6)

>> On Wed, Apr 25, 2018 at 2:36 PM, (b)(4), (b)(6) >>

wrote:

>> Great, (b)(6)

>>

(b)(4), (b)(6), (b)(7)(E)

>>

>>

>> (b)(4), (b)(5)

>>

>> -

>> (b)(4), (b)(6)
>> Georgia Institute of Technology
>> (b)(4), (b)(6)

>> From: (b)(6)
<(b)(6)@darpa.mil<mailto:(b)(6)@darpa.mil>>
>> Sent: Wednesday, April 25, 2018 2:29:36 PM
>> To: (b)(4), (b)(6)
>> Cc: (b)(6)
>> Subject: RE: Monday visit

>> (b)(4), (b)(5)

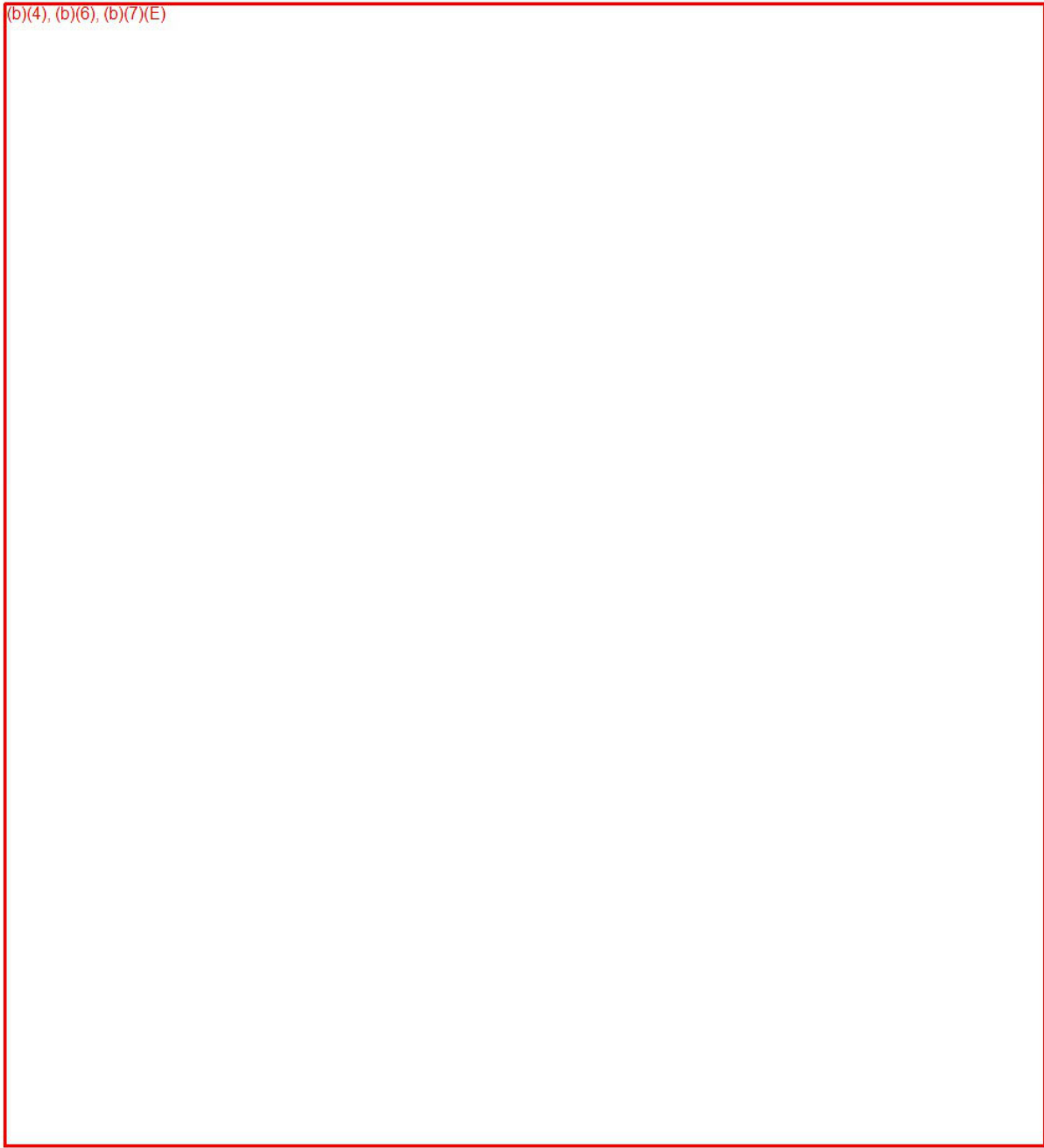
>> (b)(6)
>> (b)(6)
>> Office: (b)(6)
>> Cell: (b)(6)

>> -----Original Message-----

>> From: (b)(4), (b)(6) >>
>> Sent: Wednesday, April 25, 2018 2:05 PM
>> To: (b)(4), (b)(6) >>
>> Cc: (b)(6)
<(b)(6)@darpa.mil<mailto:(b)(6)@darpa.mil>>; (b)(6)
<(b)(6)@darpa.mil<mailto:(b)(6)@darpa.mil>>
>> Subject: Re: Monday visit
>> @ (b)(6)

(b)(4), (b)(6), (b)(7)(C), (b)(7)(E)

(b)(4), (b)(6), (b)(7)(E)



>>

>> [redacted] (b)(4), (b)(5)

>>

>> [redacted] (b)(4), (b)(6)

>> [redacted] (b)(4), (b)(6)

>> [redacted] (b)(4), (b)(6)

>>

>>

>>

>> From: [redacted] (b)(4), (b)(6)

>> Sent: Wednesday, April 25, 2018 1:59:05 PM

>> To: [redacted] (b)(4), (b)(6)

>> Cc: [redacted] (b)(6)

>> Subject: Re: Monday visit

>>

>> Attached.

>>

>> (b)(4), (b)(7)(E)

>>

>>

>> (b)(4), (b)(6)

>>

>> (b)(4), (b)(6)

>>

>>

>>

>> From: (b)(4), (b)(6) >>

>> Sent: Wednesday, April 25, 2018 1:56:48 PM

>> To: (b)(4), (b)(6)

>> Cc: (b)(6)

>> Subject: Re: Monday visit

>>

(b)(4), (b)(6)

>>

>>

(b)(4), (b)(5) (b)(4), (b)(7)(E)

(b)(4)

>>

>> Regards,

(b)(4), (b)(6)

>>

>>

>> (b)(4), (b)(6)

>>

>>

>>

>>

>>

>>

>> [On Wed, Apr 25, 2018 at 1:45 PM,](#) (b)(4), (b)(6)

<(b)(4), (b)(6)

>>> wrote:

(b)(4), (b)(6), (b)(7)(C), (b)(7)(E)

>>

>>

(b)(4), (b)(5)

>>

>>

>> (b)(4), (b)(6)

>>

>> (b)(4), (b)(6)

>>

>>

>>

>> From: (b)(4), (b)(6)

>> Sent: Wednesday, April 25, 2018 1:29:48 PM

>> To: (b)(6)

>> Cc: (b)(4), (b)(6)

>> Subject: Re: Monday visit

>>

>> (b)(4), (b)(6), (b)(7)(C), (b)(7)(E)

>>

>>

>> (b)(4), (b)(6) >>

>>

>> (b)(4), (b)(6)

>>

>>

>>

>> From: (b)(4), (b)(6)

>> Sent: Wednesday, April 25, 2018 11:54:14 AM

>> To: (b)(6)

>> Cc: (b)(4), (b)(6)

>> Subject: Re: Monday visit

>>

>> (b)(4), (b)(6), (b)(7)(C), (b)(7)(E)

>>

>>

>> (b)(4), (b)(6) >>

>>

>> (b)(4), (b)(6)

>>

>>

>>

>> From: (b)(6)

(b)(6) @darpa.mil<mailto:(b)(6)@darpa.mil>

<mailto:(b)(6)@darpa.mil>>>

>> Sent: Wednesday, April 25, 2018 10:23 AM

>> To: (b)(4), (b)(6) (b)(6)

>> Cc:

>> Subject: RE: Monday visit

>>

>> Rgr. thanks!

>>

>> (b)(6)

>> (b)(6)

>> Office: (b)(6)

>> Cell: (b)(6)

>>

>>

>> -----Original Message-----

>> From: (b)(4), (b)(6) >>>

>> Sent: Wednesday, April 25, 2018 10:21 AM

>> To: (b)(6) @darpa.mil<mailto:(b)(6)@darpa.mil>

<mailto:(b)(6)@darpa.mil>>> (b)(6)

(b)(6) @darpa.mil<mailto:(b)(6)@darpa.mil>

<mailto:(b)(6)@darpa.mil>>>

>> Cc: (b)(4), (b)(6) >>>

>> Subject: Re: Monday visit

>>

[Redacted] (b)(4), (b)(5)

>>

>>

>> (b)(4), (b)(6) >>

>> (b)(4), (b)(6)

>>

>>

>>

>> From: (b)(6) @darpa.mil<mailto:(b)(6)@darpa.mil>
<mailto:(b)(6)@darpa.mil>>>

>> Sent: Monday, April 23, 2018 9:37:42 PM

>> To: (b)(6)

>> Cc: (b)(4), (b)(6)

>> Subject: Re: Monday visit

>>

[Redacted] (b)(4), (b)(5)

>>

>>> On Apr 23, 2018, at 21:05, (b)(6) @darpa.mil<mailto:(b)(6)@darpa.mil>
<mailto:(b)(6)@darpa.mil>>> wrote:

>>>

[Redacted] (b)(4), (b)(5), (b)(6)

>>>

>>> (b)(4), (b)(6), (b)(7)(E) >

>>> [Redacted] (b)(4), (b)(5)

>>>

>>> (b)(6) [Redacted] (b)(4), (b)(5)

>>>

>>> (b)(6)

>>>

>>>

>>>

>>>> On Apr 23, 2018, at 9:01 PM, (b)(4), (b)(6) >
<(b)(4), (b)(6)>>> wrote:

>>>>

>>>> Dude, we are still in April.

>>>>

>>>>

>>>> (b)(4), (b)(6) >>

>>>>

>>>> (b)(4), (b)(6)

>>>>

>>>>

>>>>

>>>> From: (b)(4), (b)(6) >>

Obtained by UndeadFOIA

>>>> Sent: Monday, April 23, 2018 8:56:54 PM

>>>> To: (b)(6)

>>>> Cc: (b)(4), (b)(6) (b)(6)

>>>> Subject: Re: Monday visit

>>>>

>>>> (b)(4), (b)(5)

>>>>

>>>> (b)(4), (b)(6)

>>>>

>>>>

>>>>

>>>> (b)(4), (b)(6) >>

<(b)(4), (b)(6) >>>

>>>>

>>>> On Mon, Apr 23, 2018 at 8:30 PM, (b)(6)

<(b)(6)@darpa.mil<mailto:(b)(6)@darpa.mil><mailto:(b)(6)@darpa.mil>>>>

<mailto:(b)(6)@darpa.mil><mailto:(b)(6)@darpa.mil>>>> wrote:

>>>> April 1st to present.

>>>>

>>>> On Apr 23, 2018, at 20:28, (b)(4), (b)(6)

<(b)(4), (b)(6) >>>> wrote:

>>>>

>>>> (b)(6)

>>>>

>>>> (b)(4), (b)(5)

>>>>

>>>> Regards,

>>>> (b)(4), (b)(6)

>>>>

>>>>

>>>>

>>>>

>>>>

>>>> (b)(4), (b)(6) >>

<(b)(4), (b)(6) >>>

>>>>

>>>> On Mon, Apr 23, 2018 at 8:27 PM, (b)(4), (b)(6)

<mailto:(b)(4), (b)(6) >>>> wrote:

>>>> Cool,

>>>>

>>>>

>>>> (b)(4), (b)(6) >>

<mailto:(b)(4), (b)(6) >>>

>>>> (b)(4), (b)(6)

>>>> (b)(4), (b)(6)

>>>>

>>>>

>>>>

>>>> From: (b)(6)@darpa.mil<mailto:(b)(6)@darpa.mil>

<mailto:(b)(6)@darpa.mil><mailto:(b)(6)@darpa.mil>

<mailto:(b)(6)@darpa.mil>>>>

>>>> Sent: Monday, April 23, 2018 8:26:08 PM

>>>> To: (b)(4), (b)(6)

>>>> Cc: (b)(6) (b)(4), (b)(6)

<mailto:(b)(4), (b)(6) >>>

>>>> Subject: Re: Monday visit

>>>>

>>>> (A)

>>>>

>>>> On Apr 23, 2018, at 20:24, (b)(4), (b)(6)

<mailto:(b)(4), (b)(6)> >>>> wrote:

>>>>

>>>> So, (b)(6) the right one is this:

>>>>

>>>> (b)(4), (b)(6), (b)(7)(C), (b)(7)(E)
>>>>
>>>>
>>>>
>>>>
>>>>

>>>> ?

>>>>

>>>> Thanks,

>>>>

>>>> -

>>>> (b)(4), (b)(6)

<mailto:(b)(4), (b)(6)> >>>>

>>>> (b)(4), (b)(6)

>>>> (b)(4), (b)(6)

>>>>

>>>>

>>>>

>>>> From: (b)(6)

<(b)(6)@darpa.mil<mailto:(b)(6)@darpa.mil>

<mailto:(b)(6)@darpa.mil>><mailto:(b)(6)@darpa.mil>

<mailto: @darpa.mil>>>>

>>>> Sent: Monday, April 23, 2018 8:19:28 PM

>>>> To: (b)(4), (b)(6)

<mailto:(b)(4), (b)(6)> >>>>

>>>> Cc: (b)(6)

>>>> Subject: Fwd: Monday visit

>>>>

>>>> (b)(4), (b)(6)

>>>>

(b)(4), (b)(5)

>>>>

>>>> (b)(6)

>>>>

>>>>

>>>> Begin forwarded message:

>>>>

>>>> From: (b)(4), (b)(6), (b)(7)(C), (b)(7)(E)

<mailto:(b)(4), (b)(6), (b)(7)(C), (b)(7)(E)> >>>>

<mailto: >>>>

>>>> Date: April 23, 2018 at 5:59:53 PM EDT

>>>> To: (b)(6)@darpa.mil<mailto:(b)(6)@darpa.mil>

<mailto:(b)(6)@darpa.mil>><mailto:(b)(6)@darpa.mil>

<mailto: @darpa.mil>>><mailto:(b)(6)@darpa.mil>

<mailto: @darpa.mil>><mailto:(b)(6)@darpa.mil>

<mailto: @darpa.mil>>>>

>>>> Cc: (b)(6)

<(b)(6)@darpa.mil<mailto:(b)(6)@darpa.mil>

<mailto:(b)(6)@darpa.mil>><mailto:(b)(6)@darpa.mil>

Obtained by UndeadFOIA

<mailto:(b)(6)@darpa.mil>><mailto:(b)(6)@darpa.mil>
<mailto:(b)(6)@darpa.mil>><mailto:(b)(6)@darpa.mil>
<mailto:(b)(6)@darpa.mil>>>>>, (b)(6)
(b)(6)@darpa.mil<mailto:(b)(6)@darpa.mil>><mailto:(b)(6)@darpa.mil>>
<mailto:(b)(6)@darpa.mil>><mailto:(b)(6)@darpa.mil>>>
<mailto:(b)(6)@darpa.mil>><mailto:(b)(6)@darpa.mil>>
<mailto:(b)(6)@darpa.mil>><mailto:(b)(6)@darpa.mil>>>>>, (b)(4), (b)(6)
(b)(4), (b)(6)
<mailto:(b)(4), (b)(6)>
<mailto:(b)(6)@mitre.org>>>>>, (b)(4), (b)(6) "WF (FBI)"
<(b)(4), (b)(6)>>>>>
<mailto:(b)(4), (b)(7)(C), (b)(7)(E)>
<mailto:(b)(4), (b)(7)(C), (b)(7)(E)>
>>>>> Subject: Re: Monday visit
>>>>>
>>>>> (b)(4), (b)(7)(E)
>>>>>
>>>>>
>>>>>
>>>>>
>>>>>
>>>>> ----- Original message -----
>>>>> From: (b)(6)@darpa.mil<mailto:(b)(6)@darpa.mil>
<mailto:(b)(6)@darpa.mil>><mailto:(b)(6)@darpa.mil>
<mailto:(b)(6)@darpa.mil>>>>><mailto:(b)(6)@darpa.mil>
<mailto:(b)(6)@darpa.mil>><mailto:(b)(6)@darpa.mil>
<mailto:(b)(6)@darpa.mil>>>>>
>>>>> Date: 4/23/18 5:40 PM (GMT-05:00)
>>>>> To: (b)(6), (b)(7)(C) (BS) (FBI)" (b)(6), (b)(7)(C)
<mailto:(b)(4), (b)(6), (b)(7)(C)>
<mailto:(b)(4), (b)(6), (b)(7)(C)>
>>>>> Cc: (b)(6)
<(b)(6)@darpa.mil<mailto:(b)(6)@darpa.mil>
<mailto:(b)(6)@darpa.mil>><mailto:(b)(6)@darpa.mil>
<mailto:(b)(6)@darpa.mil>>>>><mailto:(b)(6)@darpa.mil>
<mailto:(b)(6)@darpa.mil>><mailto:(b)(6)@darpa.mil>
<mailto:(b)(6)@darpa.mil>>>>>>>, (b)(6)
(b)(6)@darpa.mil<mailto:(b)(6)@darpa.mil>><mailto:(b)(6)@darpa.mil>>
<mailto:(b)(6)@darpa.mil>><mailto:(b)(6)@darpa.mil>>
<mailto:(b)(6)@darpa.mil>><mailto:(b)(6)@darpa.mil>>>>>, (b)(6)
<(b)(4), (b)(6)>><mailto:(b)(4), (b)(6)>><mailto:(b)(4), (b)(6)>>
<mailto:(b)(4), (b)(6)>>>>><mailto:(b)(4), (b)(6)>><mailto:(b)(4), (b)(6)>><mailto:(b)(4), (b)(6)>>
<mailto:(b)(4), (b)(6)>>>>> (b)(6), (b)(7)(C) "WF (FBI)"
(b)(4), (b)(6), (b)(7)(C)
>>>>> Subject: Re: Monday visit
>>>>>
>>>>> (b)(4), (b)(7)(E)
>>>>>
>>>>>
(b)(4), (b)(6), (b)(7)(C), (b)(7)(E)
>>>>> On Apr 23, 2018, at 13:53, (b)(6), (b)(7)(C), (b)(7)(E) (BS) (FBI) (b)(4), (b)(6), (b)(7)(C), (b)(7)(E)
>>>>>

>>>>
>>>> [April 1 to present is a good time frame to go with.](#)

(b)(4), (b)(6), (b)(7)(C), (b)(7)(E)

>>>>
>>>> Thanks,
>>>>

>>>> [Redacted]

>>>> From: (b)(6)
<(b)(6)@darpa.mil<mailto:(b)(6)@darpa.mil>>
<mailto:(b)(6)@darpa.mil>><mailto:(b)(6)@darpa.mil>
<mailto:(b)(6)@darpa.mil>><mailto:(b)(6)@darpa.mil>
<mailto:(b)(6)@darpa.mil>><mailto:(b)(6)@darpa.mil>
<mailto:(b)(6)@darpa.mil>>>>

(b)(4), (b)(6), (b)(7)(C)

(b)(4), (b)(6), (b)(7)(C)

>>>> Sent: Monday, April 23, 2018 1:51:49 PM

(b)(4), (b)(6), (b)(7)(C), (b)(7)(E)

>>>> To: [Redacted]
>>>> Cc: (b)(6) [Redacted] (b)(6) [Redacted]
>>>> Subject: Re: Monday visit

>>>> [Redacted]

(b)(4), (b)(7)(E)

>>>> I'll get you the answer on [Redacted]

>>>> (b)(4), (b)(7)(E) [Redacted]

(b)(4), (b)(7)(E)

[Redacted]

>>>>
>>>> Thanks,
>>>>

>>>> (b)(6) [Redacted]

>>>> On Apr 23, 2018, at 12:03 PM, (b)(6), (b)(7)(C) [Redacted] <mailto:(b)(6), (b)(7)(C) [Redacted]>
(b)(4), (b)(6), (b)(7)(C) [Redacted]

>>>>
>>>> Thanks all for meeting today. We really enjoyed the discussion and are looking forward to working together more in the future.
>>>>

>>>> (b)(4), (b)(7)(E) [Redacted]

>>>> (b)(4), (b)(7)(E) [Redacted]

(b)(4), (b)(6), (b)(7)(C)

>>>>
>>>> Anyway, thanks again and we'll talk with you all more soon.
>>>>

(b)(4), (b)(6), (b)(7)(C)

>>>> [Redacted]

(b)(4), (b)(6), (b)(7)(C)

>>>> SA [Redacted] (b) [Redacted]
(b)(4), (b)(6), (b)(7)(C) [Redacted]
>>>> [Redacted]

>>>> (b)(6), (b)(7)(C)
>>>>
>>>> From: (b)(6)
<(b)(6)@darpa.mil<mailto:(b)(6)@darpa.mil>
<mailto:(b)(6)@darpa.mil><mailto:(b)(6)@darpa.mil>
<mailto:(b)(6)@darpa.mil><mailto:(b)(6)@darpa.mil>
<mailto:(b)(6)@darpa.mil><mailto:(b)(6)@darpa.mil>
<mailto:(b)(6)@darpa.mil><mailto:(b)(6)@darpa.mil>>>>

(b)(6), (b)(7)(C)

>>>> Sent: Friday, April 20, 2018 4:04:47 PM
>>>> To: (b)(6), (b)(7) BS) (FBI); (b)(6)
>>>> Cc: (b)(6), (b)(7)(C); (b)(6)
>>>> Subject: RE: Monday visit

>>>>
>>>> [Redacted]

>>>> Look forward to meeting everyone on Monday. Attached is an overview of (b)(7)(E)

>>>> Thanks.

>>>> (b)(6)
>>>> (b)(4), (b)(6)
>>>> Office: (b)(6)
>>>> Cell: (b)(6)

>>>> -----Original Message-----

>>>> From: (b)(4), (b)(6), BS) (FBI); (b)(4), (b)(6), (b)(7)(C)
(b)(4), (b)(6), (b)(7)(C)
(b)(6), (b)(7)(C)

>>>> Sent: Friday, April 20, 2018 12:47 PM
>>>> To: (b)(6)@darpa.mil<mailto:(b)(6)@darpa.mil>
<mailto:(b)(6)@darpa.mil><mailto:(b)(6)@darpa.mil>
<mailto:(b)(6)@darpa.mil><mailto:(b)(6)@darpa.mil>
<mailto:(b)(6)@darpa.mil><mailto:(b)(6)@darpa.mil>>>>

>>>> Cc: (b)(6)
(b)(6)@darpa.mil<mailto:(b)(6)@darpa.mil>
<mailto:(b)(6)@darpa.mil><mailto:(b)(6)@darpa.mil>
<mailto:(b)(6)@darpa.mil><mailto:(b)(6)@darpa.mil>
<mailto:(b)(6)@darpa.mil><mailto:(b)(6)@darpa.mil>
<mailto:(b)(4), (b)(6)@darpa.mil><mailto:(b)(4), (b)(6)@darpa.mil>
<mailto:(b)(4), (b)(6)@darpa.mil><mailto:(b)(4), (b)(6)@darpa.mil>
<mailto:(b)(4), (b)(6)@darpa.mil><mailto:(b)(4), (b)(6)@darpa.mil>>>>: (b)(4), (b)(6), (b)(7)(C)
(WF) (FBI); (b)(4), (b)(6), (b)(7)(C)

(b)(4), (b)(6), (b)(7)(C)

>>>> Subject: Re: Monday visit

>>>>
>>>>
>>>>
>>>>
>>>> (b)(6)

>>>> (b)(4)

>>>>
>>>>
>>>>
>>>>

(b)(4)

>>>>
>>>>
>>>>
>>>>
>>>>

>>>> If we could push the meeting to 8:30 that would be best for everyone on our side. Please make sure everyone brings a CAC card and/or an official DARPA badge. Our security will want to see those.

>>>>
>>>>
>>>>

>>>> Thanks and see you all on Monday!

>>>>

(b)(4), (b)(6), (b)(7)(C)

>>>> [redacted]

>>>>
>>>>
>>>>
>>>>
>>>>

>>>> (b)(4), (b)(6), (b)(7)(C)

>>>>

>>>> From: (b)(6)@darpa.mil<mailto:(b)(6)@darpa.mil>
<mailto:(b)(6)@darpa.mil>><mailto:(b)(6)@darpa.mil>
<mailto:(b)(6)@darpa.mil>><mailto:(b)(6)@darpa.mil>
<mailto:(b)(6)@darpa.mil>><mailto:(b)(6)@darpa.mil>
<mailto:(b)(6)@darpa.mil>>>>

>>>> Sent: Friday, April 20, 2018 12:35:08 PM

>>>> To: (b)(4), (b)(6), (b)(7)(C)

>>>> Cc: (b)(6)

>>>> Subject: Monday visit

>>>>

>>>> (b)(4), (b)(6), (b)(7)(C)

>>>>

>>>> (b)(4) [Could you please provide the address and room number?](#)

>>>>

>>>> (b)(6)

>>>>
>>>>

>>>> Respectfully,

>>>>

>>>> (b)(6)

>>>> (b)(4)

>>>> Ph. (b)(6)
>>>> Cell (b)(6)
>>>>
>>>>
>>>>
>>>>
>>>>
>>
>>

Obtained by UndeadFOIA

From: (b)(6)
To: [Redacted]
Cc: [Redacted]
Subject: RE: NCPT FAK POC
Date: Friday, May 27, 2022 11:14:43 AM

[Redacted]
[Redacted]

(b)(6), (b)(3):10
U.S.C. § 130b, (b)
(3):50 U.S.C. 3605
Section 6 Public Law
86-36

V/r,

(b)(6)
(b)(6)@darpa.mil
(b)(6)@darpa.ic.gov
(b)(6) (office)
(b)(6) (cell)

(b)(6), (b)(3):10
U.S.C. § 130b

-----Original Message-----

From: (b)(6)@darpa.mil>
Sent: Friday, May 27, 2022 11:13 AM
To: (b)(6)@darpa.mil>
Cc: (b)(6)@darpa.mil>
Subject: RE: NCPT FAK POC

Hi (b)(6)

Thank you. Do you have email addresses for those names?

Regards,

(b)(6)

-----Original Message-----

From: (b)(6)@darpa.mil>
Sent: Friday, May 27, 2022 8:31 AM
To: (b)(6)@darpa.mil>
Cc: (b)(6)@darpa.mil>
Subject: Re: NCPT FAK POC

(b)(6), (b)
(3):10 U.S.C.
§ 130b

(b)(6), (b)(3):10
U.S.C. § 130b,
(b)(3):50 U.S.C.
3605 Section 6
Public Law 86-36

[Redacted]
[Redacted]

> On May 26, 2022, at 6:10 PM, (b)(6)@darpa.mil> wrote:

> Hi (b)(6)

>

> I'm trying to track down someone connected to the (b)(3):10 USC 130e

>

> [Redacted] may know: can you send his name my way?

(b)(6), (b)
(3):10
U.S.C. §
130b

> Thanks,

> (b)(6)

>

Obtained by UndeadFOIA

>
> -----Original Message-----
> From: (b)(6)@darpa.mil>
> Sent: Friday, February 18, 2022 5:32 PM
> To: (b)(6)@darpa.mil>
> Cc: (b)(6)@darpa.mil>
> Subject: Re: NCPT FAK POC

(b)(6), (b)(3):10
U.S.C. § 130b, (b)
(3):10 USC 130e

> The name isn't ringing a bell but know (b)(6) What do you need?

>> On Feb 18, 2022, at 4:26 PM, (b)(6)@darpa.mil> wrote:

(b)(6), (b)(3):10
U.S.C. § 130b,
(b)(3):10 USC
130e

>> Hi (b)(6)

>> My notes says (b)(6)

>> (b)(6) Do you recognize the name or have an email address?

(b)(6), (b)(3):10
U.S.C. § 130b,
(b)(3):10 USC
130e

>> He should be (b)(6)

>> Regards,

>> (b)(6)

>> =====

>> (b)(6)

>> DARPA I2O Technical SETA

Obtained by UndeadFOIA

From: (b)(6)
To:
Subject: Re: (b)(4)
Date: Thursday, April 26, 2018 3:39:42 PM

Ok

> On Apr 26, 2018, at 14:09, (b)(6)@darpa.mil> wrote:

>

(b)(4), (b)(7)(E),
(b)(7)(F), (b)
(3):50 U.S.C. §
3024(i)(1)

> (b)(6)

>

> We have received the list of (b)(6) (b)(6) has received them as well. I will touch base with him next week on the next step.

>

> (b)(6)

>

> Office: (b)(6)

> Cell: (b)(6)

>

>

> -----Original Message-----

> From: (b)(6)@team.neustar>

> Sent: Thursday, April 26, 2018 8:44 AM

> To: (b)(6)@darpa.mil>

> Cc: (b)(6)@team.neustar>

> Subject: (b)(4)

>

> (b)(6)

>

(b)(4), (b)(3):50 U.S.C. § 3024(i)(1)

[Large redacted area]

>

>

> Can you share with the appropriate folks? My hope would be we could narrow down interest and get more detailed on any relevant information. Also of note, there are some expansion plans that I will capture and share should they be interesting. Please feel free to reach out with questions.

>

> --

> (b)(6)

Obtained by UndeadFOIA

> (b)(6)@team.neustar <mailto:(b)(6)@team.neustar>

>

>

> (b)(4)

Obtained by UndeadFOIA

From: (b)(6)
To:
Subject: Re: [Non-DoD Source] Re: meeting
Date: Friday, April 20, 2018 10:36:16 AM

Let's get the small conference room (09-400) if we can, otherwise my office.

> On Apr 20, 2018, at 09:02, (b)(6)@darpa.mil> wrote:

> (b)(6)

> (b)(6) is good to go.

> (b)(6)

> Do I need to book a conference room for a TS level discussion or can we do it in your office?

> (b)(6)

> Office: (b)(6)

> Cell: (b)(6)

> -----Original Message-----

> From: (b)(6)

> Sent: Friday, April 20, 2018 7:18 AM

> To: (b)(6)@centergate.com>

> Subject: RE: [Non-DoD Source] Re: meeting

> I won't know the status until 8am. That's when they get in apparently. Did you send it through JPASS or fax?

> (b)(6)

> Office: (b)(6)

> Cell: (b)(6)

> -----Original Message-----

> From: (b)(6)@centergate.com>

> Sent: Friday, April 20, 2018 7:03 AM

> To: (b)(6)@darpa.mil>

> Cc: (b)(6)@mail.mil

> Subject: Re: [Non-DoD Source] Re: meeting

> Ack. I talked with (b)(6). He asked me to bring (b)(6) with. We passed clearances to your SMO last night. Could you please confirm?

>> On Apr 20, 2018, at 5:19 AM, (b)(6)@darpa.mil> wrote:

>> That all will work for us. 1200 at DARPA

>> On Apr 19, 2018, at 7:39 PM, (b)(6)@USARMY ARCYBER (US)

<(b)(6)@mail.mil<[mailto:\(b\)\(6\)@mail.mil](mailto:(b)(6)@mail.mil)>> wrote:

>> I can come to DARPA

Obtained by UndeadFOIA

>>

>> Respectfully,

>> (b)(6)

>>

>>

>>

>>

>>

>>

>> On Apr 19, 2018, at 18:37, (b)(6)@centergate.com<[mailto:\(b\)\(6\)@centergate.com](mailto:(b)(6)@centergate.com)>> wrote:

>>

>> I can. Where? That would affect what (b)(6) can do, I suspect.

>>

>>

>> On Apr 19, 2018, at 6:27 PM, (b)(6) USARMY ARCYBER (US)

<(b)(6)@mail.mil<[mailto:\(b\)\(6\)@mail.mil](mailto:(b)(6)@mail.mil)>> wrote:

>>

>> Can we do 1200???

>>

>> Respectfully,

>> (b)(6)

>>

>>

>>

>>

>>

>>

>>

>>

>> On Apr 19, 2018, at 16:49, (b)(6)

<(b)(6)@darpa.mil<[mailto:\(b\)\(6\)@darpa.mil](mailto:(b)(6)@darpa.mil)>> wrote:

>>

>> Yes, that's what I meant. Waiting to hear back from (b)(6) If it's a go, I'll ask (b)(6) about attendees.

>>

>> On Apr 19, 2018, at 4:36 PM, (b)(6)@centergate.com<[mailto:\(b\)\(6\)@centergate.com](mailto:(b)(6)@centergate.com)>> wrote:

>>

>> I think you meant 1100 at (b)(6) site.

>>

(b)(4)

>>

>>

>>

>>

>> (b)(6) could you please check if (b)(6) would be OK with (b)(6) our Classified Tech Lead also joining, or if he thinks it should just be me?

>>

>> Thanks

>>

>>

>>

>> On Apr 19, 2018, at 12:45 PM, (b)(6)

<(b)(6)@darpa.mil<[mailto:\(b\)\(6\)@darpa.mil](mailto:(b)(6)@darpa.mil)>> wrote:

>>

>> That could work, (b)(6) just has to be back by 1300.

>>

>> (b)(6)

>>

>> Are you available tomorrow at 1300? It might be too late for clearances for (b)(6) at your site but we could all meet out at (b)(6) location.

>>

>> Thanks,

>>

>> (b)(6)

>>

>> Office: (b)(6)

>> Cell: (b)(6)

>>

>>

>> -----Original Message-----

>> From: (b)(6)

>> <(b)(6)@centergate.com<mailto:(b)(6)@centergate.com>>

>> Sent: Thursday, April 19, 2018 12:42 PM

>> To: (b)(6)

>> <(b)(6)@darpa.mil<mailto:(b)(6)@darpa.mil>>

>> a.mil>>

>> Cc: (b)(6) USARMY ARCYBER (US)

>> <(b)(6)@mail.mil<mailto:(b)(6)@mail.mil>>

>> Subject: Re: meeting

>>

>> If we could do 11 tomorrow it would be the grand prize for me. I have an 8am in Chantilly.

>>

>> On Apr 19, 2018, at 12:25 PM, (b)(6)

>> <(b)(6)@darpa.mil<mailto:(b)(6)@darpa.mil>> wrote:

>>

>> We could do it tomorrow morning 10ish if (b)(6) was available then.

>>

>> (b)(6)

>> (b)(6)

>> Office: (b)(6)

>> Cell: (b)(6)

>>

>>

>> -----Original Message-----

>> From: (b)(6)

>> <(b)(6)@centergate.com<mailto:(b)(6)@centergate.com>>

>> Sent: Thursday, April 19, 2018 12:08 PM

>> To: (b)(6)

>> <(b)(6)@darpa.mil<mailto:(b)(6)@darpa.mil>>

>> a.mil>>

>> Cc: (b)(6) USARMY ARCYBER (US)

>> <(b)(6)@mail.mil<mailto:(b)(6)@mail.mil>>

>> Subject: Re: meeting

>>

>> I am available tomorrow or most of next week. However I am likely OCONUS the week after.

>>

>> On Apr 19, 2018, at 11:41 AM, (b)(6)

>> <(b)(6)@darpa.mil<mailto:(b)(6)@darpa.mil>> wrote:

>>

>> (b)(6)

>>

>> I talked with (b)(6) and I think we should have the meeting to make sure everyone is on the same page. Let me know when everyone is available? (b)(6) won't be available until May 3-4. Let me know if one of those days would work.

>>

>> Thanks,

>>

Obtained by UndeadFOIA

>> (b)(6)
>> (b)(6)
>> Office: (b)(6)
>> Cell: (b)(6)
>>
>>

>> -----Original Message-----

>> From: (b)(6)
>> <(b)(6)@centergate.com<mailto:(b)(6)@centergate.com>>
>> Sent: Thursday, April 19, 2018 9:34 AM
>> To: (b)(6) USARMY ARCYBER (US)
>> (b)(6)@mail.mil<mailto:(b)(6)@mail.mil>>
>> Cc: (b)(6)
>> (b)(6)@darpa.mil<mailto:(b)(6)@darpa.mil>>
>> a.mil>>
>> Subject: Re: meeting

>> Hello (b)(6) and (b)(6)
>>

>> Apologies for the delay. I am available whenever you are. What options do you have for time and place? I am located in Tysons Corner when I am in the office, but can meet anywhere, including up your way.

>> Regards

>> (b)(6)
>> =====
>> (b)(6)
>> (b)(6)

>> Neustar, Inc.
>> 1861 International Drive, 6th Floor
>> McLean VA 22102
>> USA
>> (b)(6) Direct
>> (b)(6) Cell
>> (b)(6)@team.neustar<mailto:(b)(6)@team.neustar>

>> On Apr 19, 2018, at 9:22 AM, (b)(6) USARMY ARCYBER (US)
>> <(b)(6)@mail.mil<mailto:(b)(6)@mail.mil>> wrote:

>> (b)(5)

>> Respectfully,

>> (b)(6)

>> From: (b)(6)
>> (b)(6)@darpa.mil<mailto:(b)(6)@darpa.mil>>
>> a.mil>]

Obtained by UndeadFOIA

>> Sent: Wednesday, April 18, 2018 7:56 AM

>> To: (b)(6) USARMY ARCYBER (US)

>> Cc: (b)(6) @centergate.com<mailto:(b)(6)@centergate.com>

>> Subject: meeting

>>

>> (b)(6) and (b)(6)

>>

>> First, (b)(6) we didn't get the chance to meet but I am (b)(6) new technical SETA. Nice to meet you, Im sure we will run into each other soon.

>>

>> (b)(6) I wanted to connect you and (b)(6) (Neustar) together because I think (b)(6) can provide you with some valuable opportunities and I know you weren't able to make it the last time (b)(6) was at DARPA. If you want, we can arrange another meeting at DARPA or maybe back out at your facility. Either way, I didn't want the ball to drop, let me know if you need anything from me.

>>

>> V/R,

>>

>>

>> (b)(6)

>> (b)(6)

>> Office: (b)(6)

>> Cell: (b)(6)

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From: (b)(6)
To:
Subject: Re: (b)(6)
Date: Wednesday, September 4, 2019 1:34:23 PM

I'll come by the back at 1400.

(b)(6)

> On Sep 4, 2019, at 1:32 PM, (b)(6)@darpa.mil> wrote:

>
> When you get a chance, I want to show you something on nsanet

> V/r,

> (b)(6)

> (b)(6) (office)
> (cell)

>
>

Obtained by UndeadFOIA

From: (b)(6)
To:
Subject: RE: SMOKE discussion - HACCS
Date: Monday, May 24, 2021 11:37:47 AM
Attachments: [image001.jpg](#)

Do you need this to be remote? Will the HACCS team want to come into DARPA?

It's easier to do a classified mtg but can adapt if things need to be virtual

V/r,

(b)(6)

(b)(6)

(office)

(cell)

From: (b)(6)

Sent: Monday, May 24, 2021 11:25 AM

To: (b)(6)

Cc:

Subject: Re: SMOKE discussion - HACCS

Hey (b)(6)

Tuesday (06/01) from 1330-1400 works fine for us.

Thanks,

(b)(6)

--

(b)(6)

MACHINE LEARNING

(b)(6)

[@twosixtech.com](mailto:(b)(6)@twosixtech.com)

(b)(6)

(m)

[twosixtech.com](mailto:(b)(6)@twosixtech.com)



On Mon, May 24, 2021 at 5:24 AM (b)(6) [@darpa.mil](mailto:(b)(6)@darpa.mil)> wrote:

(b)(6)

How does next Tuesday (06/01) from 1330-1400 look?

Regards,

(b)(6)

From: (b)(6) [@twosixtech.com](mailto:(b)(6)@twosixtech.com)>

Date: Friday, May 21, 2021 at 4:49 PM

To: (b)(6) [@darpa.mil](mailto:(b)(6)@darpa.mil)>

Cc: (b)(6) [@cvr.mil](mailto:(b)(6)@cvr.mil)>

Subject: SMOKE discussion - HACCS

Hey (b)(6)

Today I was talking with our (b)(6) about some of the C2 infrastructure emulation/simulation work that we're doing on that program. I think it could

be highly relevant to your new program concept TA3. I'm not sure how long it's been since you were briefed on HACCS, but maybe we could have a short meeting to discuss what we're up to there?

Best,

(b)(6)

--

(b)(6)

machine learning

(b)(6)

[@twosixtech.com](mailto:(b)(6)@twosixtech.com)

(b)(6)

[@twosixtech.com](mailto:(b)(6)@twosixtech.com)>

(b)(6)

(m)

[twosixtech.com](mailto:(b)(6)@twosixtech.com)[twosixtech.com](mailto:(b)(6)@twosixtech.com)>

[Image removed by sender. Two Six Technologies][twosixtech.com](mailto:(b)(6)@twosixtech.com)>

Obtained by UndeadFOIA

(b)(7)(E), (b)
(3):50 U.S.C. §
3024(f)(1)

From: (b)(6)
To: (b)(6) USARMY ARCYBER (USA)
Cc: (b)(6) USINDOPACOM, J8
Subject: RE: (b)(6) (UNCLASSIFIED)
Date: Friday, September 10, 2021 3:17:50 PM

(b)(6) will know. You are looking for the Maui HPCC guys right? The ones sending data to GN?

V/r,

(b)(6)

(b)(6)

@darpa.mil

@darpa.ic.gov

(b)(6)

(office)

(cell)

-----Original Message-----

From: (b)(6) USARMY ARCYBER (USA) <(b)(6)@army.mil>

Sent: Friday, September 10, 2021 3:01 PM

To: (b)(6)@darpa.mil>

Subject: (b)(7)(E), (UNCLASSIFIED)

CLASSIFICATION: UNCLASSIFIED

(b)(5)

-----Original Message-----

From: (b)(6)@darpa.mil>

Sent: Friday, September 10, 2021 10:23 AM

To: (b)(6) USARMY ARCYBER (USA) <(b)(6)@army.mil>

Cc: (b)(6)@darpa.mil>

Subject: RE: (UNCLASSIFIED)

V/r,

(b)(6)

(b)(6)

@darpa.mil

@darpa.ic.gov

(b)(6)

(office)

(cell)

-----Original Message-----

From: (b)(6) USARMY ARCYBER (USA) <(b)(6)@army.mil>

Sent: Friday, September 10, 2021 10:03 AM

To: (b)(6)@darpa.mil>

Subject: (UNCLASSIFIED)

CLASSIFICATION: UNCLASSIFIED

(b)(6)

Do you have (b)(6) email?

(b)(6)

CLASSIFICATION: UNCLASSIFIED

CLASSIFICATION: UNCLASSIFIED

Obtained by UndeadFOIA

(b)(6), (b)
(3):10 U.S.C.
§ 130b

From: (b)(6)
To: (b)(6)
Cc: (b)(6)
Subject: Re: USCC J9 LO5D discussion
Date: Monday, October 7, 2019 11:23:30 AM

(b)(6), (b)
(3):10 U.S.C.
§ 130b

(b)(6)

Affirmative, see u then!

> On Oct 7, 2019, at 11:18 AM, (b)(6), (b)(3):10 U.S.C. § 130b wrote:

>

> (b)(6)

>

> Just confirming we are still meeting tomorrow at 1230 in my office.

>

> (b)(6), (b)(3):10 U.S.C. § 130b

>

>

>

> -----Original Appointment-----

> From: (b)(6)@darpa.mil>

> Sent: Thursday, September 12, 2019 2:38 PM

> To: (b)(6)

> Subject: USCC J9 LO5D discussion

> When: Tuesday, October 8, 2019 12:30 PM-1:30 PM (UTC-05:00) Eastern Time (US & Canada).

> Where: OPS1 3W160

>

>

>

(b)(6), (b)
(3):10
U.S.C. §
130b

From: (b)(6)
To:
Subject: Re: Useful Links
Date: Tuesday, May 26, 2020 5:54:55 PM

Cool, these are good for how we do it.

Need to add in the attribution piece

> On May 26, 2020, at 2:55 PM, (b)(6)@darpa.mil> wrote:

>

> (b)(6)

>

> Some links that might be useful.

>

> <https://bolster.ai/blog/gans-in-real-world-can-bad-actors-use-gans-to-beat-ai/>

>

> The image at the top might make a good overview slide:

>

> Latent space maps to multiple TA1

> Real samples maps to multiple TA1

>

> Generator maps to TA2

>

> Discriminator maps to TA3

>

> Is this correct maps to TA4

>

> https://slazebni.cs.illinois.edu/spring17/lec11_gan.pdf

>

> Overview of GANs

>

> <https://arxiv.org/pdf/1805.02788.pdf>

>

> You can think of text sequences as realized playbooks.

>

> <https://arxiv.org/pdf/1811.03850.pdf>

>

> Page 4 has two images about multi-discriminator GAN. I haven't fully understood the paper but might be something with respect to the notion of reasoning independently over multiple stages in a kill chain and then "sharing" results between the discriminators and/or generators (i.e. what you do in one part of the playbook directly affects other parts of the playbook).

>

> Regards,

> (b)(6)

>

> Defense Advanced Research Projects Agency

> Information Innovation Office

> email: (b)(6)@darpa.mil

> work: (b)(6)

> mobile: (b)(6)

> fax: (b)(6)

>

>

From: (b)(6)
To: (b)(6)
Cc: (b)(6)
Subject: RE: visit request 10NOV
Date: Friday, November 6, 2020 11:10:51 AM

(b)(6)

This meeting got pushed to 10 NOV, can you please approve this update?

Meeting Date: 10 Nov from 1330-1600

(b)(6)

Thank you,

V/r,

(b)(6)

(b)(6) (office)
(b)(6) (cell)

-----Original Message-----

From: (b)(6)
Sent: Monday, October 26, 2020 9:27 AM
To: (b)(6)@darpa.mil>
Cc: (b)(6)@darpa.mil>; (b)(6)
(b)(6)@darpa.mil>
Subject: visit request 28OCT

(b)(6)

I apologize for the late request- Ive been coordinating on the high side with these folks and it took a while to get confirmation. Can you please approve the following people for a visit request on 28OCT from the Army PdM Office and TOTEMHAWK team to talk about LO5D:

(b)(6)

V/r,

(b)(6)

(b)(6) (office)
(b)(6) (cell)

From: (b)(6)
To:
Subject: RE: Visit to SATX, 16-17 August
Date: Wednesday, August 8, 2018 11:44:17 AM

WTF, who is that guy? He's not part of the team that came to GT though right?

V/r,

(b)(6)
(b)(6) (cell)

-----Original Message-----

From: (b)(6)
Sent: Wednesday, August 8, 2018 11:42 AM
To: (b)(6)@darpa.mil>
Cc: (b)(6)@darpa.mil>
Subject: Re: Visit to SATX, 16-17 August

ROTFL

So we're good.

> On Aug 8, 2018, at 11:41, (b)(6)
> (b)(6)@darpa.mil> wrote:
>
> Chase is AFOSI....
>
>
>> On Aug 8, 2018, at 8:27 AM, (b)(6)
>> (b)(6)@darpa.mil> wrote:
>>
>> Alright, well we can't do AFOSI and (b)(6) something has to get
>> bumped. I think we should do AFOSI if we can. I'll keep trying to
>> get ahold of AFOSI guys.
>>
>> Itinerary for (b)(6)
>>
>> 15AUG:
>> Flight DL 2229 Atl-SAT
>> 6pm- 728pm
>>
>> 16AUG:
>> Morning (Time: TBD): AFOSI or HACCS
>> Afternoon (Time: TBD): 24th AFCYBER brief on EA, HACCS, TC
>>
>> 17AUG:
>> Morning (Time: TBD): EA/HACCS classified talk/transition efforts
>> Afternoon (Time: TBD): SWRI tour and visit
>>
>> Flight DL 1871 SAT-ATL
>> 607pm-939pm

>>
>>
>> Hotel Preferences?? These look good and have govt rates
>> <https://www.marriott.com/hotels/travel/satcr-courtyard-san-antonio-ri>
>> verwalk/
>> <http://embassysuites3.hilton.com/en/hotels/texas/embassy-suites-by-hilton-san-antonio-riverwalk-downtown-SATESES/index.html>
>>
>>
>> Let me know what changes need to be made and I will get this sent off
>> to I2O travel

>> V/r,
>>
>> (b)(6)
>> (b)(6) (cell)

>> -----Original Message-----
>> From: (b)(6)
>> Sent: Wednesday, August 8, 2018 10:50 AM
>> To: (b)(6)
>> (b)(6)@darpa.mil>
>> Cc: (b)(6)@darpa.mil>
>> Subject: Re: Visit to SATX, 16-17 August

>> (b)(6) our other POC for HACCS is available, just confirmed.
>>
>>> On Aug 8, 2018, at 4:51 AM, (b)(6)
>>> (b)(6)@darpa.mil> wrote:
>>>
>>> Rgr, I asked our POC (b)(6) from SATX if he was available that
>>> morning- waiting for his response.

>>> V/r,
>>>
>>> (b)(6)
>>> (b)(6) (cell)

>>> -----Original Message-----
>>> From: (b)(6)
>>> Sent: Tuesday, August 7, 2018 11:33 PM
>>> To: (b)(6)@darpa.mil>
>>> Cc: (b)(6)
>>> (b)(6)@darpa.mil>
>>> Subject: Re: Visit to SATX, 16-17 August

>>>
>>> If we need the morning of the 16 for AFOSI, then I'll take the 6pm
>>> Delta flight from ATL on the 15. Otherwise, the 8:21am Delta flight
>>> from ATL on the 16. Return to ATL with the 6:07pm flight on the 17.
>>>
>>>> On Aug 6, 2018, at 14:34, (b)(6)

Obtained by UndeadFOIA

>>>> (b)(6)@darpa.mil> wrote:
>>>>
>>>> [https://matrix.itasoftware.com/#view-details:research=ATLSAT-SATATL](https://matrix.itasoftware.com/#view-details:research=ATLSAT-SATATL;solution=0eTpfTAFMJPPPkbskRARN11/NCXo3OHCpW9NfgFDPM57uA00F)
>>>> ;solution=0eTpfTAFMJPPPkbskRARN11/NCXo3OHCpW9NfgFDPM57uA00F
>>>>

>>>> -----Original Message-----
>>>> From: (b)(6)
>>>> Sent: Monday, August 6, 2018 2:34 PM
>>>> To: (b)(6)@darpa.mil>
>>>> Cc: (b)(6)
>>>> (b)(6)@darpa.mil>
>>>> Subject: Re: Visit to SATX, 16-17 August
>>>>

>>>> What's the latest I can take back to ATL on Friday?

>>>>
>>>>>> On Aug 6, 2018, at 14:32, (b)(6)
>>>>>> (b)(6)@darpa.mil> wrote:
>>>>>>

>>>>>> There's a number of flights starting at 5:39am that get you there
>>>>>> before 10am.
>>>>>>

>>>>>> -----Original Message-----
>>>>>> From: (b)(6)
>>>>>> Sent: Monday, August 6, 2018 2:29 PM
>>>>>> To: (b)(6)@darpa.mil>
>>>>>> Cc: (b)(6)
>>>>>> (b)(6)@darpa.mil>
>>>>>> Subject: Re: Visit to SATX, 16-17 August
>>>>>>

>>>>>> I don't want to spend three nights in SA...can you see if there's
>>>>>> a super early flight from Atlanta in the morning of the 16th that
>>>>>> I can take?
>>>>>>

>>>>>>>> On Aug 6, 2018, at 14:22, (b)(6)
>>>>>>>> (b)(6)@darpa.mil> wrote:
>>>>>>>>

>>>>>>>> My suggestion is that we try to fly out on the 15th and get AFOSI
>>>>>>>> knocked out on the morning of the 16th, since an hour likely
>>>>>>>> won't be enough (we have 3? parties there to speak with).
>>>>>>>>

>>>>>>>> -----Original Message-----
>>>>>>>> From: (b)(6)
>>>>>>>> Sent: Saturday, August 4, 2018 11:40 AM
>>>>>>>> To: (b)(6)@us.af.mil>
>>>>>>>> Cc: (b)(6)@darpa.mil>;
>>>>>>>> (b)(6)
>>>>>>>> (b)(6)@darpa.mil>;
>>>>>>>> (b)(6)@darpa.mil>; (b)(6)
>>>>>>>> (b) CIV USAF AFMC AFRL/RIGB (b)(6)@us.af.mil>; (b)(6)
>>>>>>>> (b)(6) CTR USAF AFMC AFRL/RIGA
>>>>>>>> (b)(6)@us.af.mil>; (b)(6)@cynnovative.com;
>>>>>>>> (b)(6), (b)(4)
>>>>>>>> Subject: Re: Visit to SATX, 16-17 August
>>>>>>>>

>>>>>>>> Looks like a busy schedule.

>>>>>>>>
>>>>>>>> How deep in each of these do you want me to go? I'm thinking

>>>>> detailed briefs for EA (focus of EG and the Russian work; 1.5
>>>>> hours) and TC (approach, status of technologies, results from E3,
>>>>> transition to USTRANSCOM; 1 hour); and a probably shorter brief
>>>>> on HACCS (with some early results highlighted;
>>>>> 30 minutes).

>>>>>
>>>>> On the 17th, depending on how long the morning discussion goes,
>>>>> perhaps I can have an hour with AFOSI (before the SWRI tour).

>>>>>
>>>>> (b)(6)

>>>>>
>>>>> On Aug 3, 2018, at 22:24, (b)(6) CIV USAF AFMC 24
>>>>> AF/AFRL/RIG/OL-SATX (b)(6)@us.af.mil> wrote:

>>>>>
>>>>> Hi (b)(6)

>>>>>
>>>>> Wanted to follow up on an earlier e-mail thread about a visit to
>>>>> San Antonio. The 16th and 17th would be ideal dates and we could
>>>>> cover a few topics with the locals. What do you think about
>>>>> coming on those dates and covering the following topics?

>>>>>
>>>>> 16 August, afternoon - brief 24th Air Force (Air Forces Cyber)
>>>>> and 25th Air Force (Air Force ISR Agency) personnel on EA,
>>>>> HACCS, and TC

>>>>> -- There were a few topics to follow up from the EA briefing to
>>>>> Maj Gen Weggeman a few months ago and it would be useful to
>>>>> start engaging with 24th and 25th on those

>>>>> -- Additionally, related to EA, there have been quite a few
>>>>> discussions around the Air Force about purchasing a subscription
>>>>> to a commercial threat intelligence service - there is very
>>>>> little knowledge about these services within the Air Force,
>>>>> outside of what vendors are claiming. An EA briefing may help
>>>>> some of these folks get a better understanding of this landscape.
>>>>> -- HACCS is especially relevant to organizations like the 90th
>>>>> Cyberspace Operations Squadron and the Lifecycle Management
>>>>> Center program offices, due to the capabilities they develop and
>>>>> acquire

>>>>> -- TC is especially relevant to Cyber Protection Teams (service
>>>>> and
>>>>> national)

>>>>> 17 August, morning - classified discussion on potential EA
>>>>> transition/integration activity and HACCS collaboration with a
>>>>> mission partner

>>>>> 17 August, afternoon - tour of Southwest Research Institute

>>>>>
>>>>> Quite a few folks around here interested in these topics and I
>>>>> think the mission partner discussions should be worthwhile. John
>>>>> Perretta was planning to join, as well. Of course, since you'd
>>>>> probably want to catch up with AFOSI while you're here, can
>>>>> shift schedules to accommodate their availability.

>>>>>
>>>>> Unfortunately it doesn't look like I'll be going to RAID. I've
>>>>> been on the road too much, lately, and am planning to be at D60
>>>>> and an AF/NASA/NRO Space/Cybersecurity TEM in the NCR around
>>>>> that timeframe, as well...

>>>>>>

>>>>>> Thanks, (b)(6)

>>>>>>

>>>>>> AFRL/RI Liaison to AFCYBER

>>>>>> Cell: (b)(6)

>>>>>>

From: (b)(6)
To: (b)(6)
Subject: RE: Visit to SATX, 16-17 August
Date: Monday, August 6, 2018 4:10:02 PM

(b)(6)

Can you reply with your concur for this trip so that we can get the approval process going?

Thanks,

V/r,

(b)(6)

(b)(6) (cell)

-----Original Message-----

From: (b)(6)
Sent: Monday, August 6, 2018 2:34 PM
To: (b)(6)@darpa.mil>
Cc: (b)(6)@darpa.mil>
Subject: Re: Visit to SATX, 16-17 August

What's the latest I can take back to ATL on Friday?

> On Aug 6, 2018, at 14:32, (b)(6)
(b)(6)@darpa.mil> wrote:

> There's a number of flights starting at 5:39am that get you there before 10am.

>

> -----Original Message-----

> **From:** (b)(6)
> **Sent:** Monday, August 6, 2018 2:29 PM
> **To:** (b)(6)@darpa.mil>
> **Cc:** (b)(6)
> (b)(6)@darpa.mil>
> **Subject:** Re: Visit to SATX, 16-17 August

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Obtained by UndeadFOIA

>> -----Original Message-----

>> From: (b)(6)

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>> Cc: (b)(6)@darpa.mil>;

>> (b)(6)@darpa.mil>;

>> (b)(6)@darpa.mil>; (b)(6)

>> CIV USAF AFMC AFRL/RIGB (b)(6)@us.af.mil>; (b)(6)

>> CTR USAF AFMC AFRL/RIGA (b)(6)@us.af.mil>;

>> (b)(6)@cynnovative.com; (b)(6), (b)(4)

>> Subject: Re: Visit to SATX, 16-17 August

>>

>> Looks like a busy schedule.

>>

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>> briefs for EA (focus of EG and the Russian work; 1.5 hours) and TC

>> (approach, status of technologies, results from E3, transition to

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>> 30 minutes).

>>

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>> (b)(6)

>>

>>

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>>> AF/AFRL/RIG/OL-SATX (b)(6)@us.af.mil> wrote:

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>>>

>>> Wanted to follow up on an earlier e-mail thread about a visit to San

>>> Antonio. The 16th and 17th would be ideal dates and we could cover a

>>> few topics with the locals. What do you think about coming on those

>>> dates and covering the following topics?

>>>

>>> 16 August, afternoon - brief 24th Air Force (Air Forces Cyber) and

>>> 25th Air Force (Air Force ISR Agency) personnel on EA, HACCS, and TC

>>> -- There were a few topics to follow up from the EA briefing to Maj

>>> Gen Weggeman a few months ago and it would be useful to start

>>> engaging with 24th and 25th on those

>>> -- Additionally, related to EA, there have been quite a few

>>> discussions around the Air Force about purchasing a subscription to

>>> a commercial threat intelligence service - there is very little

>>> knowledge about these services within the Air Force, outside of what

>>> vendors are claiming. An EA briefing may help some of these folks

>>> get a better understanding of this landscape.

>>> -- HACCS is especially relevant to organizations like the 90th

>>> Cyberspace Operations Squadron and the Lifecycle Management Center

>>> program offices, due to the capabilities they develop and acquire

>>> -- TC is especially relevant to Cyber Protection Teams (service and

>>> national)

>>> 17 August, morning - classified discussion on potential EA

>>> transition/integration activity and HACCS collaboration with a

>>> mission partner

Obtained by UndeadFOIA

>>> 17 August, afternoon - tour of Southwest Research Institute

>>>

>>> Quite a few folks around here interested in these topics and I think
>>> the mission partner discussions should be worthwhile. John Perretta
>>> was planning to join, as well. Of course, since you'd probably want
>>> to catch up with AFOSI while you're here, can shift schedules to
>>> accommodate their availability.

>>>

>>> Unfortunately it doesn't look like I'll be going to RAID. I've been
>>> on the road too much, lately, and am planning to be at D60 and an
>>> AF/NASA/NRO Space/Cybersecurity TEM in the NCR around that
>>> timeframe, as well...

>>>

(b)(6) >>> Thanks, [redacted]

>>>

>>> AFRL/RI Liaison to AFCYBER

>>> Cell: (b)(6) [redacted]

>>>

(b)(3):50 U.S.C. 3605 Section 6 Public Law 86-36

(b)(6), (b)(3):10 U.S.C. § 130b (b)(3):50 U.S.C. 3605-Section 6 Public Law 86-3

(b)(6), (b)(3):10 U.S.C. § 130b, (b)(3):50 U.S.C. 3605 Section 6 Public Law 86-36

From:
To:
Bcc:

(b)(6), (b)(3):10 U.S.C. 3605 Section 6 Public Law 86-36

(b)(3):50 U.S.C. 3605 Section 6 Public Law 86-36

(b)(3):50 U.S.C. 3605 Section 6 Public Law 86-36

(b)(6), (b)(3):10 U.S.C. 3605 Section 6 Public Law 86-36

(b)(3):50 U.S.C. 3605 Section 6 Public Law 86-36

(b)(3):50 U.S.C. 3605 Section 6 Public Law 86-36

(b)(6)
(b)(6) @us.af.mil; (b)(6) (b)(6) @dc3.mil; (b)(6) @igt.org;
(b)(6), (b)(7)(C), (b)(7)(E) (b)(6) @gmail.com;
(b)(6) @us.af.mil; (b)(6) @mail.mil; (b)(6) @mail.mil;
(b)(6) @us.af.mil; (b)(6) @us.af.mil; (b)(6) (b)(6)
(b)(6) @nsc.eop.gov; (b)(6)
(b)(6) @usma.edu;
(b)(6) @mail.mil; cory.wilson@usss.dhs.gov;
(b)(6) @mail.mil; (b)(6) @mail.mil;
(b)(6) @ll.mit.edu;
(b)(6) @us.af.mil; (b)(6) @us.af.mil; (b)(6)
(b)(6) @cox.com; (b)(6) @us.af.mil;
(b)(6) @ipmchase.com (b)(6) @us.af.mil;
(b)(6), (b)(7)(C), (b)(7)(E) (b)(6) @us.af.mil; (b)(6) @gmail.com;
Edward.Rhyn@HO.DHS.GOV; (b)(6) @us.af.mil; (b)(6) @us.af.mil;
(b)(6) @mail.mil; (b)(6) @us.af.mil;
(b)(6) @sarcenter.org; (b)(6) @us.af.mil;
(b)(6) @us.af.mil (b)(6), (b)(3):10 U.S.C. § 130b
(b)(6) @mail.mil;
(b)(6) @ostp.eop.gov; (b)(6) @igt.org; (b)(6) @igt.org; (b)(6) @igt.org; (b)(6) @igt.org;
(b)(6) @mail.mil; (b)(6) @mail.mil;
(b)(6) @fsarcenter.org; (b)(6) @mail.mil; (b)(6) @gmail.com;
(b)(6) @us.af.mil; (b)(6) @us.af.mil; (b)(6) @us.af.mil; (b)(6), (b)(7)(C), (b)(7)(E)

(b)(3):50 U.S.C. 3605 Section 6 Public Law 86-3

(b)(6), (b)(3):10 U.S.C. 3605 Section 6 Public Law 86-3

(b)(6), (b)(3):10 U.S.C. 3605 Section 6 Public Law 86-3

(b)(6), (b)(3):10 U.S.C. 3605 Section 6 Public Law 86-3

(b)(6), (b)(3):10 U.S.C. 3605 Section 6 Public Law 86-3

(b)(3):50 U.S.C. 3605 Section 6 Public Law 86-3

(b)(6), (b)(3):10 U.S.C. 3605 Section 6 Public Law 86-3

Subject: REMINDER- EA PI meeting: November 28th
Date: Tuesday, November 20, 2018 9:21:56 AM
Attachments: EA Agenda 20181128_Final.pdf

* This is a reminder that the next EA PI meeting is going to be held on 28 November, if you are interested in attending please register for the event at the link provided below. If you have already registered, thank you, sorry for the duplicate email

Greetings,

(b)(5)

V/r,
(b)(6)
Office: (b)(6)
Cell: (b)(6)

-----Original Message-----

(b)(3):50
U.S.C.
3605
Section 6
Public La

(b)(6), (b)
(3):10
U.S.C. §
130b, (b)
(3):50
U.S.C. 36

(b)(3):50
U.S.C.
3605
Section 6
Public
Law 86-3

(b)(6), (b)
(3):10
U.S.C. §
130b

(b)(6), (b)
(3):10
U.S.C. §
130b

(b)(6), (b)
(3):10
U.S.C. §
130b

(b)(6), (b)
(3):10
U.S.C. §
130b

(b)(6), (b)
(3):10
U.S.C. §
130b

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U.S.C.
3605
Section 6
Public
Law 86-3

(b)(6), (b)
(7)(C), (b)
(7)(F)

<(b)(6) 2@us.af.mil> (b)(6), (b)(3):10 U.S.C. § 130b

(b)(6) @us.af.mil' <(b)(6) @us.af.mil>;
(b)(6) @us.af.mil' <(b)(6) @us.af.mil> (b)(6) @nsc.eop.gov'
(b)(6) @nsc.eop.gov>; (b)(6) @diux.mil'
<brandon.guest@diux.mil>; (b)(6) @us.af.mil'
<(b)(6) @us.af.mil> (b)(6) @mail.mil'
(b)(6) @mail.mil'; (b)(6) @us.af.mil'
(b)(6) @us.af.mil'; (b)(6) @fsarcenter.org'
(b)(6) @fsarcenter.org>; (b)(6) @us.af.mil'
<(b)(6) 2@us.af.mil>; (b)(6) @packetforensics.com'
(b)(6) @packetforensics.com>; (b)(6) 2@us.af.mil'
(b)(6) 2@us.af.mil>; (b)(6), (b)(7)(C), (b)(7)(E)
(b)(6), (b)(3):10 U.S.C. § 130b
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(b)(6) @mail.mil' <(b)(6) @ostp.eop.gov>
(b)(6) @ostp.eop.gov>; (b) @iqt.org' <(b) @iqt.org>;
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(b)(6) @iqt.org' <(b)(6) @iqt.org>; (b)(6), (b)(7)(C), (b)(7)(E)
(b)(6), (b)(7)(C), (b)(7)(E)
(b)(6) @mail.mil'
(b)(6) @mail.mil'; (b)(6) @fsarcenter.org'
<(b)(6) @fsarcenter.org> (b)(6) @mail.mil'
(b)(6) @mail.mil'; (b)(6) @isi.edu' <(b)(6) @isi.edu>;
(b)(6) @twosixlabs.com' <(b)(6) @twosixlabs.com>;
(b)(6) @cynnovative.com' <(b)(6) @cynnovative.com>;
(b) @kududyn.com' <(b)(6) @kududyn.com>; (b)(6) @kududyn.com'
(b)(6) @kududyn.com>; (b)(6) @kududyn.com; (b)(6) @ainfosec.com'
<(b)(6) @ainfosec.com>; (b)(6) @gatech.edu' <(b)(6) @gatech.edu>
Cc: (b)(6) @darpa.mil'; (b)(6)
(b)(6) @darpa.mil'; (b)(6)
(b)(6) @darpa.mil'

Subject: EA PI meeting: November 28th

(b)(6), (b)
(7)(C), (b)
(7)(E)

(b)(3):50
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Public La

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Section 6
Public La

(b)(3):50
U.S.C.
3605
Section 6
Public
Law 86-3

Greetings,

The next DARPA Enhanced Attribution program PI meeting is confirmed for November 28th at DARPA. Please see attached meeting agenda. We'll be meeting in the DARPA Conference Center. Address is 675 N. Randolph St, Arlington, VA.

If you plan to attend this event, please register using the following link:
Registration website:

<https://www.schafertmd.com/darpa/i2o/ea/pi/2018/nov/>

Please let us know if you have any questions.

V/r,

(b)(6)

(b)(6) (cell)

Enhanced Attribution PI Meeting

Wednesday, November 28, 2018

DARPA, 675 N Randolph St, Arlington, VA

8:00AM – 9:00AM	Registration
9:00AM – 9:05AM	Security Brief (b)(6) DARPA/I2O (b)(6)
9:05AM – 9:10AM	Opening Remarks (b)(6) DARPA/I2O (b)(6)
9:10AM – 11:00AM	(b)(4) Nations (b)(6) Kudu Dynamics
11:00AM – 11:45AM	(b)(4) (b)(6) USC Information Sciences Institute
11:45AM – 1:00PM	Lunch
1:00PM – 3:00 PM	(b)(4) (b)(6) Georgia Institute of Technology
3:00PM – 3:15PM	Break
3:15PM – 4:00PM	Enhanced Attribution (b)(6) Assured Information Security
4:00PM – 4:45PM	(b)(4) (b)(6) Two Six Labs
4:45PM – 5:00PM	Closing Remarks (b)(6) DARPA/I2O Program Manager

Obtained by UndeadFOIA

(b)(3):50
U.S.C. 3605
Section 6
Public Law
86-36

From: (b)(6)
To:
Subject: reviewers
Date: Monday, November 8, 2021 1:51:37 PM

I think this is a pretty good list, (b)(6) not included. (b)(6) the new USCC J3 (b)(6) replacement) is not in this list, don't have low side email.

(b)(6)2@us.af.mil
(b)(6)@us.af.mil
(b)(4)@mail.mil
(b)(6)@cybercom.mil
(b)(6)@cybercom.mil
(b)(6)@cybercom.mil
(b)(6)@army.mil
(b)(3):50
U.S.C. 36
@nsa.gov
(b)(6)2@us.af.mil
(b)(6)@army.mil
(b)(6)@us.af.mil
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(b)(6)@army.mil
(b)(6)@army.mil
(b)(6)5@us.af.mil
(b)(6)@army.mil
(b)(6)@army.mil

V/r,

(b)(6)
(b)(6) (office)
(b)(6) (cell)
(b)(6) (NSTS)

Obtained by UndeadFOIA

From: (b)(6)
To: (b)(6)
Subject: (b)(4) presentation
Date: Monday, July 9, 2018 12:49:19 PM
Attachments: [20180713-EA-SCORE Talk.pptx](#)

(b)(6)

Here is a draft for (b)(4). If I missed anything or if you want me to add anything else let me know. See you Thursday!

V/r,

(b)(6)

(b)(6)

From: (b)(6)
Sent: Thursday, September 23, 2021 4:21 PM
To: (b)(6)
Subject: slides
Attachments: EA_CNMF_092021.pptx

Do something useful, make these better :)

V/r,

(b)(6)

(b)(6) @arpa.mil
(b)(6) @arpa.ic.gov

(b)(6) (office)
(b)(6) (cell)

Enhanced Attribution/ (b)(4)

(b)(6)

Information Innovation Office





BLUF

- Enhanced Attribution:
 - 4.5 year, \$100M DARPA program ended August 2021 to build technologies to fuse all sources of information in order to enable real-time tracking of Malicious Cyber Actor (MCA) activities and attribute those activities to the individual(s) responsible
 - [REDACTED] :
 - Operational prototype to integrate EA capabilities with Unified Platform to fuse blue space data with MCA infrastructure from grey and red space vantage points
- Issues/Decision Points:
 - Unified Platform has allocated FY22 funds (\$9M) to pay for the integration and development of [REDACTED] however, they do not have the funding or requirement to pay for the commercial data licenses (\$6M) that are required
 - There is a concern with overlapping datasets between [REDACTED] and current DOD systems
 - The DOD is developing a long term, whole of government, strategy for large scale commercial data acquisition
 - [REDACTED] offers unique datasets and capabilities that can make a significant impact to USCC missions TODAY

(b)(6), (b)(7)(E), (b)(3);10 USC 130e, (b)(3);50 U.S.C. § 3024(i)(1)

Obtained by UndeadFOIA

(b)(7)(E), (b)(3):10 USC 130e

(b)(6), (b)(7)(E), (b)(3):10 USC 130e, (b)(3):50 U.S.C. § 3024(i)(1)

(b)(4), (b)(7)(E), (b)(3);10 USC 130e, (b)(3);50 U.S.C. § 3024(i)(1)

(b)(4), (b)(7)(E), (b)(3);10 USC 130e, (b)(3);50 U.S.C. § 3024(i)(1)



(b)(4)

Provides Real-Time Tracking of Nation State Cyber Threat Groups

(b)(4)

Obtained by UndeadFOIA



CUI - FEDCON

(b)(4)

Provides Unique Vantage Points Not Currently Available to the DOD

(b)(4)



(b)(4), (b)(6), (b)(7)(E), (b)(3);10 USC 130e, (b)(3);50 U.S.C. § 3024(i)(1)

Obtained by UndeadFOIA

(b)(4), (b)(7)(E), (b)(3);10 USC 130e

(b)(6), (b)(7)(E), (b)(3):10 USC 130e



Commercial Data Questions to Inform USCC's Commercial Data Strategy

- Scale
 - Petabyte scale, possibly Exabyte scale over time
 - Storage: On Prem vs Cloud
 - Need SME's to develop an architecture to handle automated ingestion and indexing of large scale data that enables feature extraction and signal modeling
 - Cost: pay as you go vs. bulk data ingest
 - Pay as you go:
 - Cheaper
 - Limited number of accesses (API keys)
 - Limited number of queries
 - Data stored at supplier site
 - Not ideal for enterprise government licenses
 - Data providers prefer this method because they maintain control over their data many times over
 - Bulk Data Ingest:
 - More expensive
 - Unlimited access and query capability
 - Data stored on premise
 - Data provider assumes more risk, sometimes requires a trusted personal relationship
 - Ideal for enterprise government licenses
- Legal
 - Can the USG legally own/store raw data from commercially available sources?
 - How does the USG handle US Persons data that may be in these data sets?
- Evaluation
 - No two data sets are the same
 - Data sets need to be evaluated for integrity, value, noise

(b)(4), (b)(7)(E), (b)(7)(F), (b)(3);10 USC 130e, (b)(3);50 U.S.C. § 3024(i)(1)

(b)(6)

Subject: SMOKE/Constellation discussion

Location: (b)(3):10 U.S. Code § 424

Start: Tue 4/26/2022 2:00 PM

End: Tue 4/26/2022 3:00 PM

Show Time As: Tentative

Recurrence: (none)

Meeting Status: Not yet responded


Organizer: (b)(6)

Required Attendees:

Details to follow

From: (b)(6) @box.com on behalf of (b)(6)
To: (b)(6)
Subject: (b)(6) has accepted the invitation to you (b)(4) Networks.xlsx" file on Box
Date: Tuesday, December 18, 2018 3:10:53 PM

(b)(6) accepted your invitation to:



(b)(4) Networks.xlsx
Collaborated File

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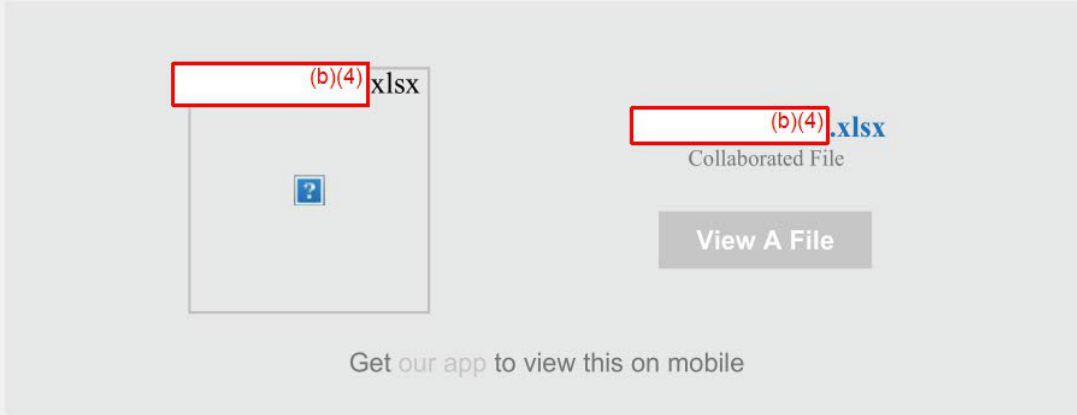
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From: (b)(6) @box.com on behalf of (b)(6)
To: (b)(6)
Subject: (b)(6) has accepted the invitation to your (b)(4).xlsx" file on Box
Date: Wednesday, December 12, 2018 9:50:01 AM

(b)(6) accepted your invitation to:



(b)(4).xlsx

(b)(4).xlsx
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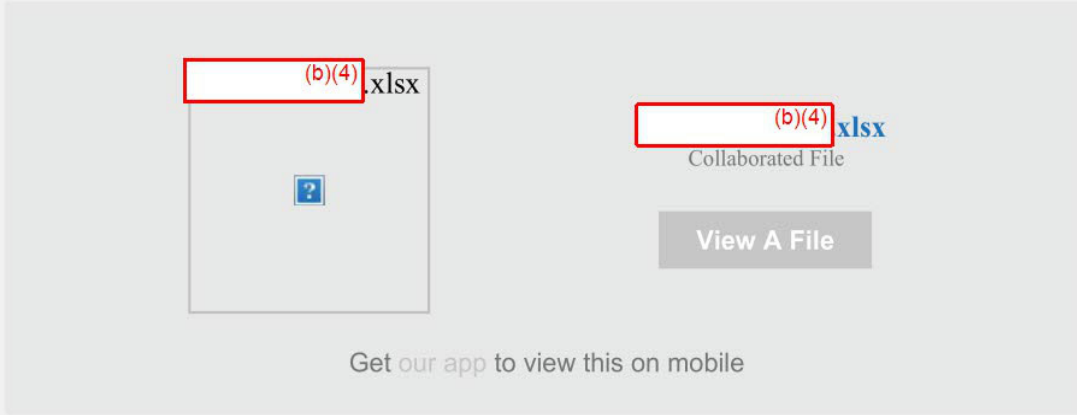
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From: (b)(6) @box.com on behalf of (b)(6)
To: (b)(6)
Subject: (b)(6) has accepted the invitation to your (b)(4)s.xlsx" file on Box
Date: Friday, December 14, 2018 9:21:00 AM

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DARPA IT Services (b)(6)@darpa.mil

(b)(6)

Subject: Travel to (b)(6)

Start: Tue 4/26/2022 1:30 PM

End: Tue 4/26/2022 2:00 PM

Show Time As: Tentative

Recurrence: (none)

Meeting Status: Not yet responded

Organizer: (b)(6)

Required Attendees:

Obtained by UndeadFOIA

From: (b)(6)
To: (b)(6)
Subject: updated slides
Date: Friday, February 11, 2022 9:54:41 AM
Attachments: [Constellation Proposer Day.pptx](#)

Will add Orion's quads when received. We can probably just eliminate Slide 9

V/r,

(b)(6)
(b)(6) @darpa.mil
(b)(6) @darpa.ic.gov
(b)(6) (office)
(b)(6) (cell)

Obtained by UndeadFOIA

(b)(5), (b)(6)

Obtained by UndeadFOIA

(b)(5), (b)(7)(E), (b)(3);10 USC 130e

Obtained by UndeadFOIA

(b)(5), (b)(7)(E), (b)(3);10 USC 130e

Obtained by UndeadFOIA

(b)(5), (b)(7)(E), (b)(3);10 USC 130e

Obtained by UndeadFOIA

(b)(5), (b)(7)(E), (b)(3);10 USC 130e

Obtained by UndeadFOIA

(b)(5), (b)(7)(E), (b)(3);10 USC 130e

Obtained by UndeadFOIA

(b)(5)

Obtained by UndeadFOIA

(b)(5)

Obtained by UndeadFOIA

(b)(5), (b)(7)(E), (b)(3);10 USC 130e

Obtained by UndeadFOIA

From: (b)(6)
To: (b)(6)
Subject: (b)(6) slides
Date: Tuesday, May 15, 2018 12:13:55 PM
Attachments: [spectral-analysis-darpa-15may2018.pdf](#)
[ATT00001.txt](#)

Speculative Execution (Attacks) Today and in the Next Decade

(b)(6)
(b)(6)@csail.mit.edu

May 15, 2018
DARPA, Arlington, VA

UNCLASSIFIED

DO NOT DISTRIBUTE BEYOND DoD WITHOUT PERMISSION

Bio: Security Stint

2001-2008

- *Program Shepherding* [Kiriansky et al '02] (aka Control Flow Integrity [Abadi et al '05])
- 2003-2007 Determina, Inc. - acquired by VMware
- 2007 VMware ESX security mitigations; Trusted ESX
- 2008 'retired': P.S. good enough for *non-government* work
- In Microsoft's Control Flow Guard (2014)
- In Intel's Control-flow Enforcement Technology (2016)

Outline

- History - Spectre{1,2}, Meltdown
local information disclosure attacks
- New variants [public embargo]
Spectre 1.1: Speculative Buffer Overflows
- Hardware mitigation zoo:
 - 1.1 : 🦉 Sloth, 🐼 Sloth Bear, 🐆 Snow Leopard
 - 4,5,...: 🐎 WoLF {Arctic, Gray, Red}
- New payloads: +remote, +integrity [undisclosed]

Disclaimers

- Tested vulnerabilities and PoCs are under public **embargo(Intel, ARM) + (Google, Microsoft) till June 12 October**
- No end-to-end exploits. Defensive research
- *Hypothetical attacks: undisclosed side-products, untested speculative^2 'scary thoughts'*
- Cited vendors to be considered personal opinions, not official final company positions

Vulnerabilities

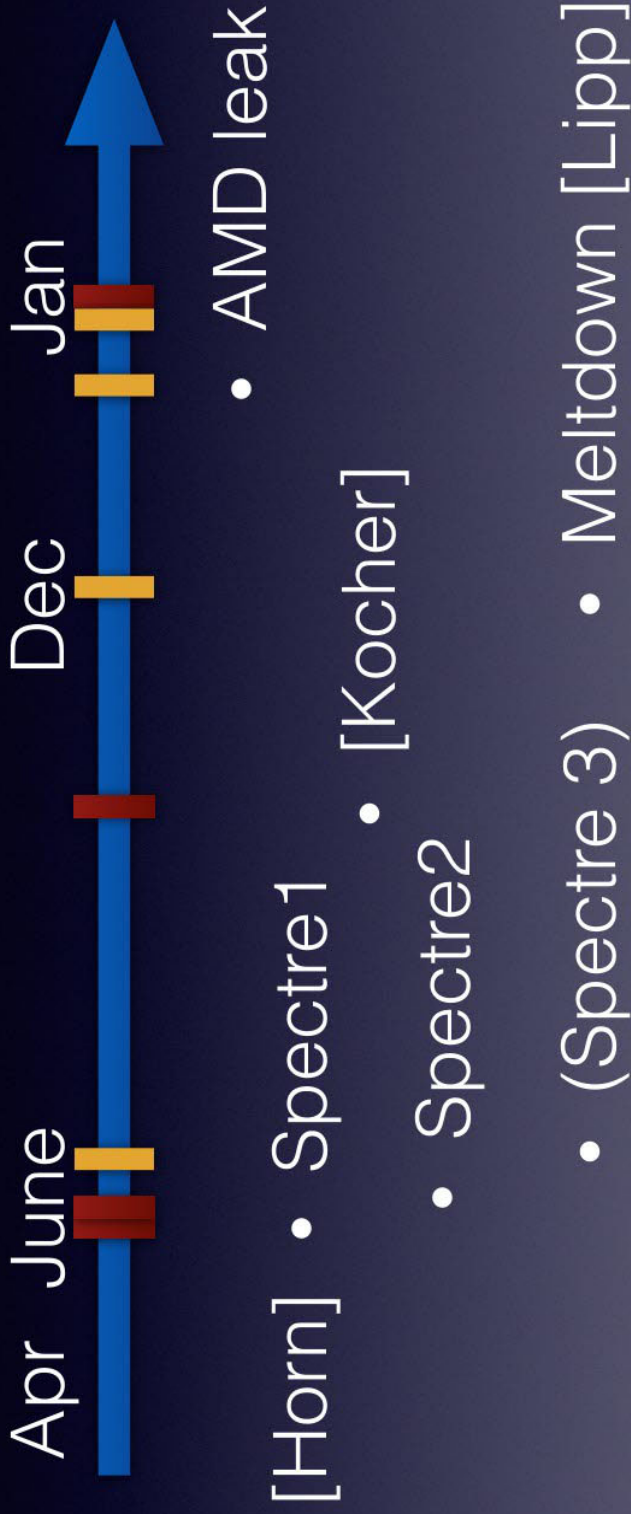
Spectre 1.1 Speculative Buffer Overflows

```
if (y < lenc)
    c[y] = z;
```

Spectre 1.1 Speculative Buffer Overflows

$c[y] = z;$ (speculative) arbitrary write

Spectre / Meltdown Timeline



Google reported to
Intel/ARM/AMD/IBM

Spectre 1.0

× Attacker controlled, out-of-bound load

```
if (x < lenb) {  
    temp &= a[b[x] * 512];  
}
```

Speculative branch:
x < lenb predicted
lenb not in L1,
resolved late

&b[x] = &secret

Address of a[b[x]*512]

Spectre 1.0

✗ Attacker controlled, out-of-bound load

Speculative branch:
x < lenb predicted
lenb not in L1,
resolved late

```
if (x < lenb) {  
    temp &= a[b[x] * 512];  
}
```

&b[x] = &secret



Address of a[b[x]*512]

DO NOT DISTRIBUTE

Spectre 1.1 Vulnerability

```
bar (u64 x,  
    u64 y, u64 z) {  
    if (y < lenc)  
        c[y] = z;  
}
```

y Attacker controlled,
out-of-bound store!

Speculative branch:
y < lenc predicted
lenc not in L1

&b[x] = &secret

Spectre 1.1 POC

```
if (y < lenb)
    c[y] = z;
}

z = ROP
&c[y] = &ReturnAddress
```

```
if (x < lenb) {
    fence();
ROP: temp&= a[b[x] * 512]; &b[x] = &secret
}
```

a    Address of a[b[x]*512]

Spectre 1.1 In Assembly (x86)

; Retired instructions

```
    cmp    %rsi, lenc  
    ↓ jbe    1f
```

```
if (y < lenc)
```

```
    c[y] = z;
```

```
}
```

RA

Correct RSB
prediction

```
1: ← retq
```

DO NOT DISTRIBUTE

Spectre 1.1

In Assembly (x86)

; Speculative instructions

```

if (y < lenc)
    c[y] = z;
}

    cmp    %rsi, lenc
    jbe   1f

    mov    c, %rax
    mov    %rdx, (%rax, %rsi, 8)

1: ← retq

```

RA

Correct RSB
prediction

DO NOT DISTRIBUTE

Spectre 1.1

In Assembly (x86)

```

;; x[b] == &secret
;; y[c] == %rsp
;; z = ROP gadget sequence to
   ex-filtrate secret
   cmp %rsi, lenc ; L2 miss
   ↓ jbe 1f ; predicted not-taken

if (y < lenc)
    c[y] = z;
}

; [speculative]
mov c, %rax ; L1 hit
mov %rdx, (%rax, %rsi, 8)
; overwrites (%rsp) in store buffer

1: retq ; [speculative]
; Store-to-Load forwarding of ROP

```



ROP

Correct RSB prediction
 Resteered resolved RET

DO NOT DISTRIBUTE

Code Pointer Attacks

- Returns
- Indirect calls
- Indirect jumps

Meltdown.R/W (Spectre 3.2)

- Lazy dTLB fault handling:
 - User/Supervisor was Meltdown=Spectre3
 - Read/Write privilege enforcement, same
- Allows overwrite of read-only data, or code pointers: vtables, GOT/IAT, CFG

Data Attacks

- Overwrite `lenb` or `b`

```
if (x < lenb) {  
    x &= (lenb-1);  
    temp &= a[b[x] * 512];
```

Hypothetical





DO NOT DISTRIBUTE

Implications

- Need to strengthen existing protections against
 - Stack Overflows
 - Heap Overflows
 - Integer Overflows
- Need new protections against impossible paths

Proposed Strong Defenses

Hardware Mitigation Zoo

-  :Sloth Bear: Store-to-Load Blocking
-  :Sloth: Lazy Store-to-Load forwarding
-  :Snow Leopard: Frozen Store-to-Load Forwarding
-  :WoLF: Wait on Load Forwarding

Spectre 1.1

In microops (~X86)

`c[y] = z;`

```
STA (%rax,%rsi,8) ; = %rsp
STD %rdx          ; = Zzz
```

```
LDA nip ← (%rsp)
```

```
JR nip           ; RA predicted
; if LDA == STA address:
; Store-to-Load forwarding
```

}

RA

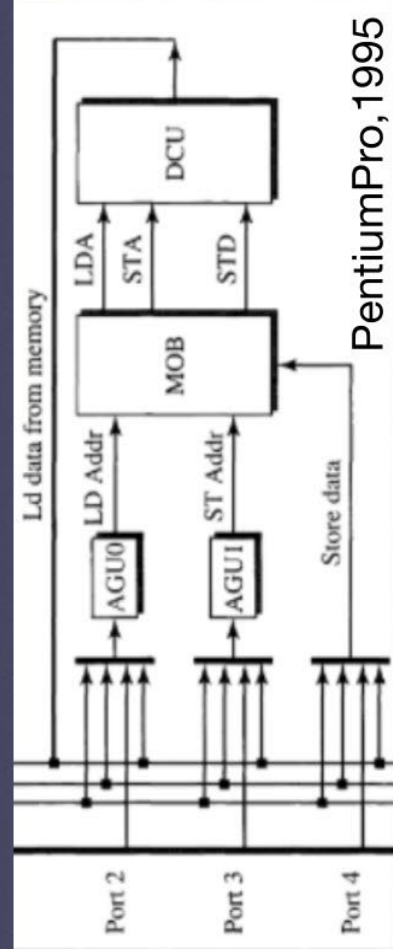
Correct RSB prediction

ROP

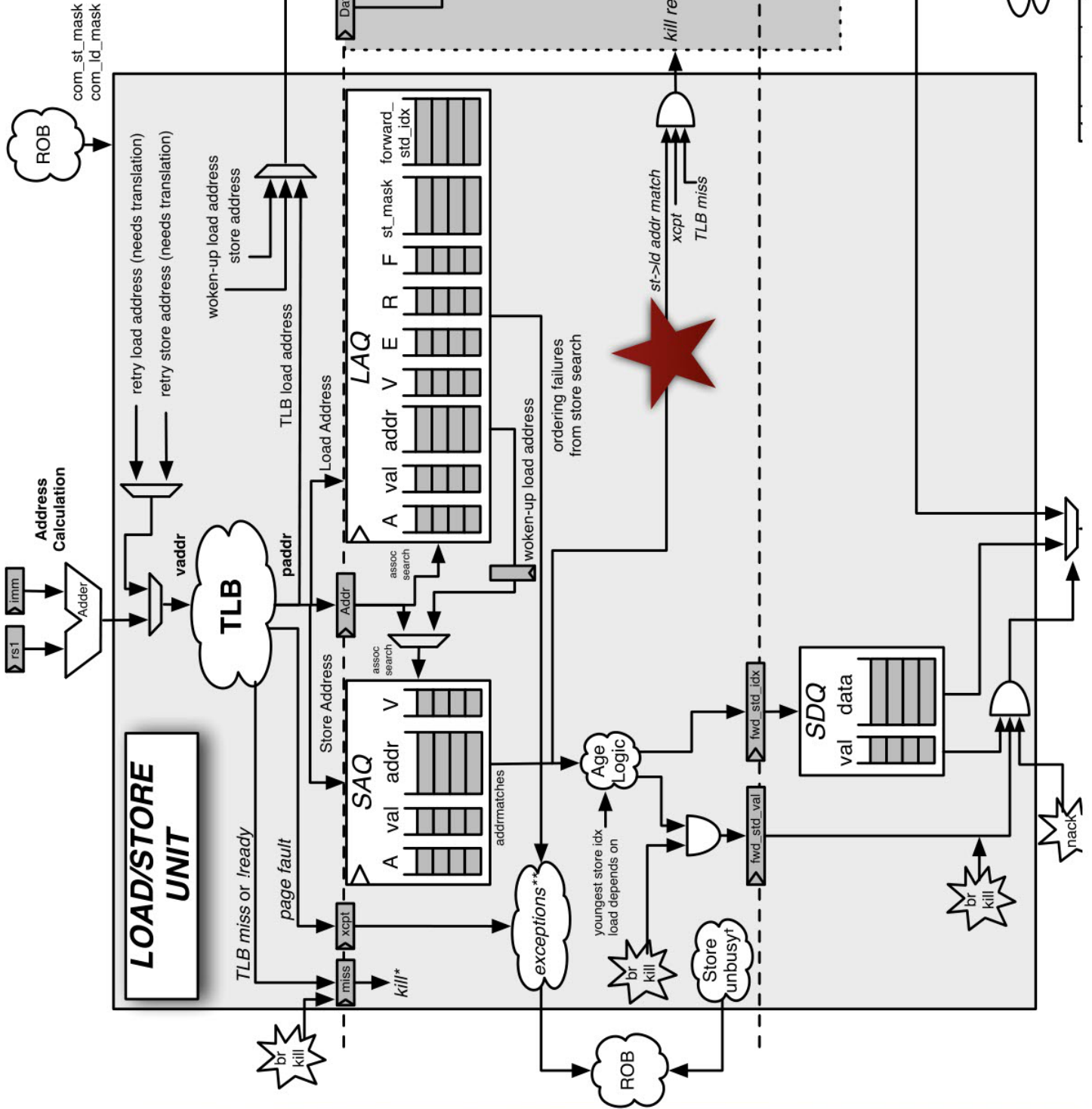
Resteered resolved RET

DO NOT DISTRIBUTE

Intel Haswell / Skylake Pipeline



RISC-V BOOM [Celio17]



Spectre 1.1

🐼 Store-to-Load Blocking

- Chicken bit? Fix publicly, incrementally educate developers, give users choice
- Performance loss on register spills, C++ methods

```
c[y] = z;
```

```
STA (%rax, %rsi, 8) ; = %rsp
STD %rdx ; = Zzz
```

```
LDA nip, (%rsp) ; if LDA == STA
JR nip ; RA predicted
;
; Only 'Senior Stores' Forward
```

RA

Correct RSB prediction

DO NOT DISTRIBUTE

Spectre 1.1

🦘 Lazy Store-to-Load

- Microcode??
- Tagged RET (prefix) to not hurt retpolines (Spectre2)

`c[Y] = Z;`

```
STA (%rax, %rsi, 8) ; = %rsp
STD %rdx           ; = ZZZ
```

```
LDA.NE nip ← (%rsp); if LDA == STA
JR nip           ; RA predicted
;
; Tagged 'Senior Stores' Forward
```

RA

Correct RSB prediction

DO NOT DISTRIBUTE

Spectre 1.1

Frozen Store-to-Load

- Alpha store sets, even for x86-TSO
- *New silicon - may help against other attacks*

`c[y] = z;`

```
STA (%rax, %rsi, 8) ; = %rsp
STD %rdx           ; = Zzz
```

```
LDA.NF nip ← (%rsp); if LDA == STA
JR nip           ; RA predicted
; Not forwarding speculative MOB
; Known non-speculative forwarders
```

}

RA

Correct RSB prediction

DO NOT DISTRIBUTE

Spectre 4.x, 5.y?

Hypothetical

DO NOT DISTRIBUTE

Spectre Novelty

Speculative
arbitrary read



Data-dependent
microarchitectural state



secret



channel

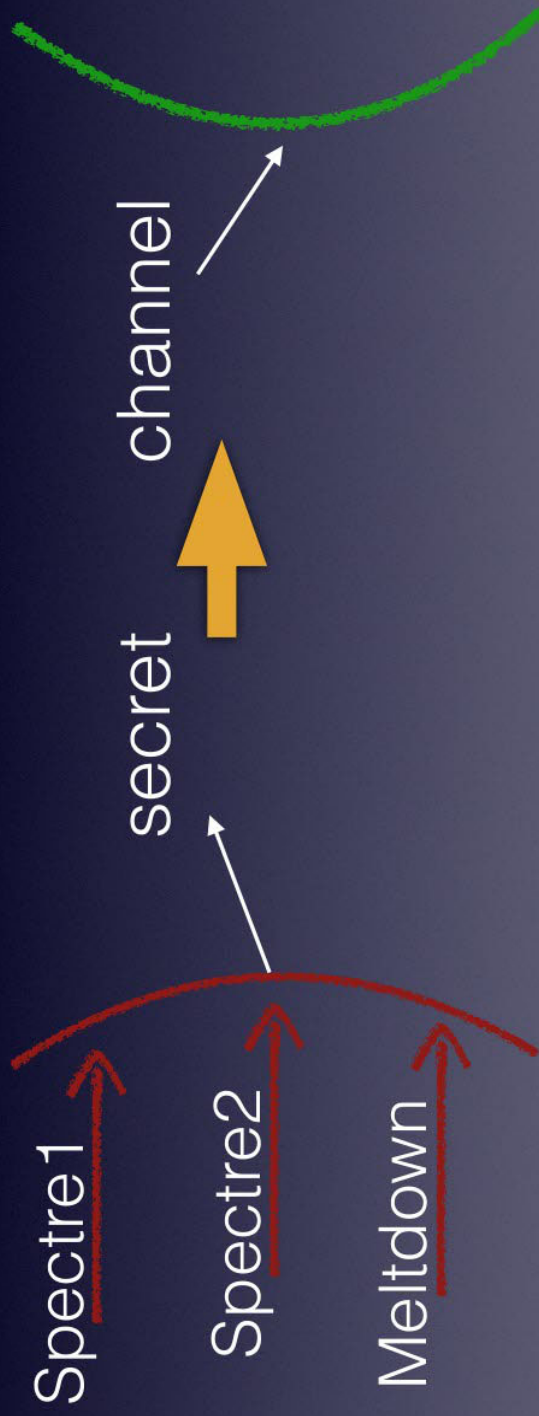


Attack Surface
branch control
(in-filtration)

Leak Surface
branch side-channels
(ex-filtration)

DO NOT DISTRIBUTE

Many Infiltrations



Spectre1

Spectre2

Meltdown

secret

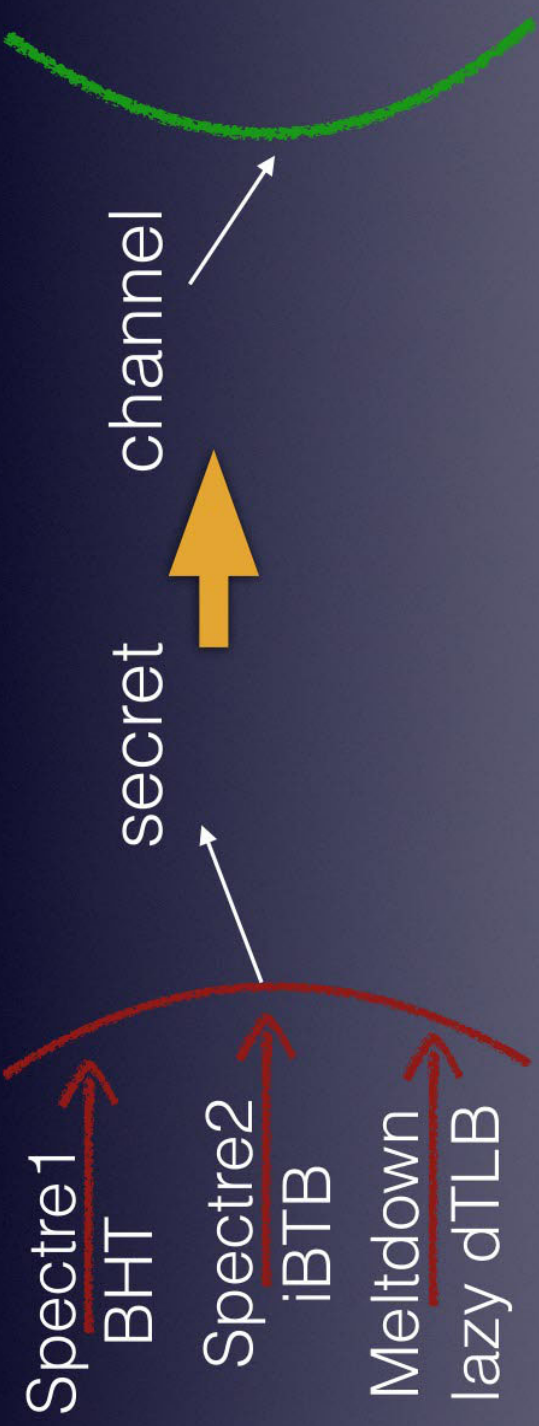
channel

Attack Surface
various control
(in-filtration)

Leak Surface
various side-channels
(ex-filtration)

DO NOT DISTRIBUTE

Many Infiltrations



Spectre1
BHT

Spectre2
iBTB

Meltdown
lazy dTLB

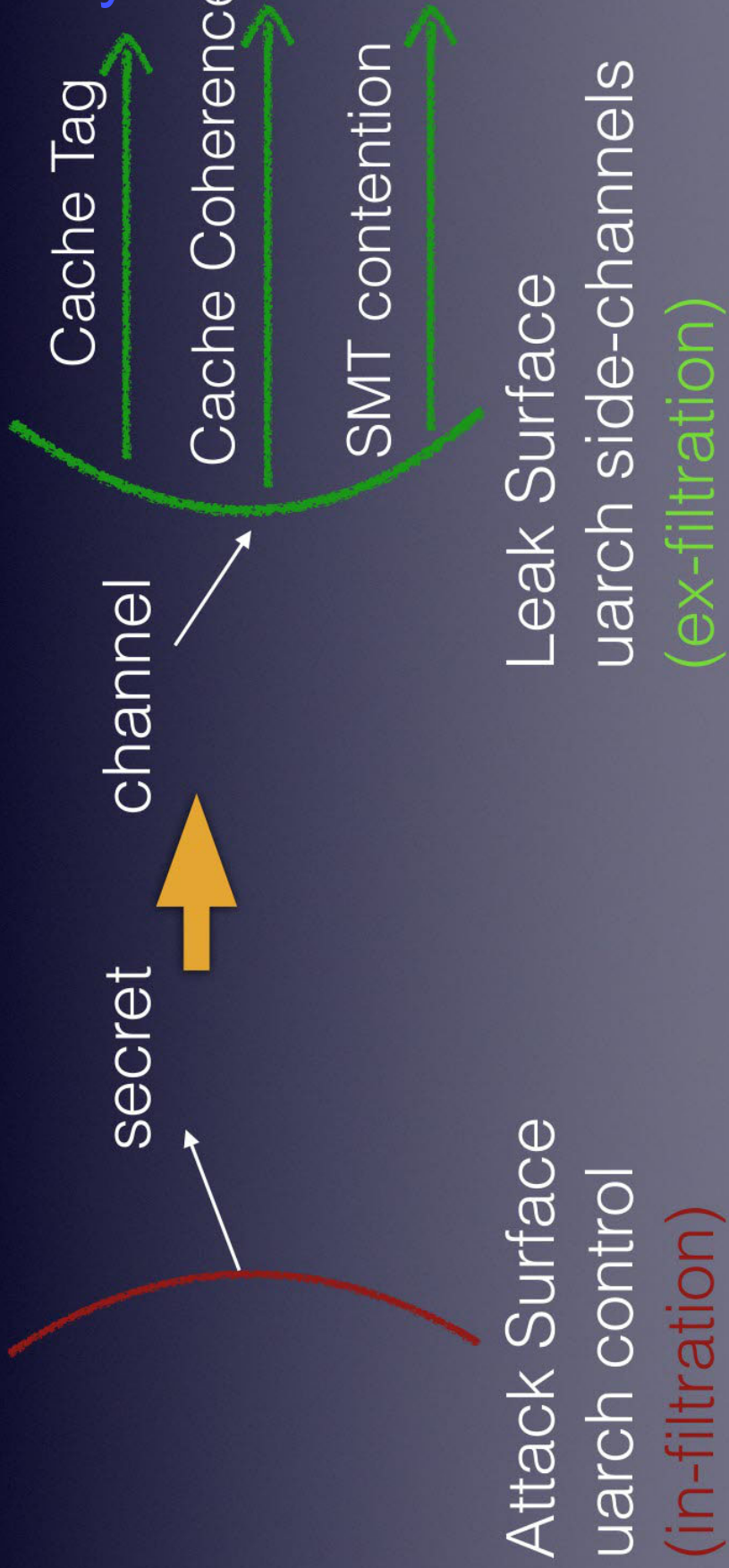
Attack Surface
varch control
(in-filtration)

secret

Leak Surface
varch side-channels
(ex-filtration)

DO NOT DISTRIBUTE

Many Exfiltrations



DO NOT DISTRIBUTE

Sideshow of Side-channels (Speculative)

Timing Footprint

- Caches: line, set, **LRU***, fill- and wb-buffers, prefetchers
- Branch predictors (BTB, BHT, RSB)
- TLB, PTE cache

Timing Contention

- Caches: slice, bank
- Execution resources: execution ports, variable latency ALUs, LB/SB/ROB/BOB/RS/PRF/FL, banked RF
- System resources: DRAM, QPI

* in DAWG [Kiriansky et al, 2018]

Hypothetical

DO NOT DISTRIBUTE

WOLF threat model

In-filtration

- Remote host
 - = same host
 - = same socket
 - = same core
 - = same SMT

Ex-filtration

- Remote host
 - = same host
 - = same socket
 - = same core
 - = same SMT
- Air-gap

Hypothetical

DO NOT DISTRIBUTE



WoLF: Wait on

Load Forwarding

[with Carl Waldspurger and Joel Emer]

- Hardware
 - Software co-design
- Arctic (Whitelist ALUs)
 - α Alpha - aggressive
- Gray (Gray execution)
 - β Beta - binary compatible
- Red (Really Paranoid)

Spectre In microops (~x86)

```

a[b[x] * 512]
LEA r8 ← b(%rip)
LEA r9 ← (%rdi, %r8) ; &b[x]
LDA r10 ← (%r9) ; b[x]
SHL r11 ← r10, $11 ; b[x] * 512

LEA r12 ← a(%rip)
LEA r13 ← (%r11, %r12)
LDA r14 ← (%r13) ; a[b[x] * 512]

; Speculative Load Forwarding

```

Spectre In microops (~x86)

```

a[b[x] * 512]
LEA r8 ← b(%rip)
LEA r9 ← (%rdi, %r8) ; &b[x]
LDA r10 ← (%r9) ; b[x]
SHL r11 ← r10, $11 ; b[x] * 512

LEA r12 ← a(%rip)
LEA r13 ← (%r11, %r12)
LDA r14 ← (%r13) ; a[b[x] * 512]

```

; Speculative Load Forwarding

Spectre WOLF1: Arctic

a[b[x] * 512]

```

LEA r8 ← b(%rip)
LEA r9 ← (%rdi, %r8) ; &b[x]
LDA r10 ← (%r9) ; b[x]
SHL r11 ← r10, $11 ; b[x] * 512

```

; Whitelist Load Forwarding

Spectre

WOLF2: Gray

$a[b[x] * 512]$

```
LEA r8 ← b(%rip)
LEA r9 ← (%rdi, %r8) ; &b[x]
LDA r10 ← (%r9) ; b[x]
SHL r11 ← r10, $11 ; b[x] * 512
```

```
LEA r12 ← a(%rip)
LEA r13 ← (%r11, %r12)
LDA r14 ← (%r13) ; a[b[x] * 512]
```

; No Side-effect Load Forwarding

Spectre

WOLF2a: Gray a

```
a[b[x] * 512]
; %rdi trusted in foo, not in bar
LEA r8 ← b(%rip)
LEA r9 ← (%rdi, %r8) ; &b[x]
LDA r10 ← (%r9) ; b[x]
SHL r11 ← r10, $11 ; b[x] * 512

LEA r12 ← a(%rip)
LEA r13 ← (%r11, %r12)
LDA r14 ← (%r13) ; a[b[x] * 512]

; Trusted Index Load Forwarding
```

Spectre

Wolff0: Red



a[b[x] * 512]

```

LEA r8 ← b(%rip)
LEA r9 ← (%rdi,%r8) ; &b[x]
LEA r10 ← (%r9) ; b[x]

```

- ; Wait on Load:
- ; No speculative L1 or TLB miss,
- ; or LRU hit cache/TLB/PTE-cache

Paranoid Payloads

Red 🐰: Traps and Snares?

PVT and EM Attacks

Gate and wire abstraction vulnerabilities

- Static CMOS current affected by code/data:
 - power, voltage, temperature (fan noise)
 - frequency: DVFS, TurboBoost
- DRAM access as GSM transmitter [GSMem]
- DRAM RowHammer - EM coupling, hot-carriers

Hypothetical

DO NOT DISTRIBUTE

Spectre+GSMem

<https://www.darpa.mil/policy/visitor-information>

The following devices may be taken above the first floor of the DARPA facility

Portable telephones (cell phones) that do not have a picture-taking capability.

- (Speculative) DRAM channel access as a modulator (@1900MHz)
- [Guri et al, Bridgeware: The Air-Gap Malware, CACM 4/18]

Hypothetical

DO NOT DISTRIBUTE

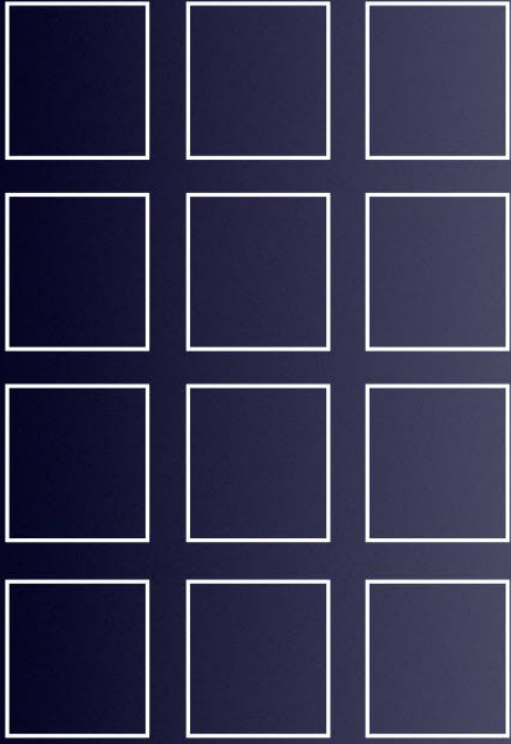
SpecHammer = Spectre + RowHammer

- [Stelios Sidiroglou-Douskos, February 2018]
[undisclosed]
- For hardware vulnerable to RowHammer
[OS mitigations ineffective]

Hypothetical

DO NOT DISTRIBUTE

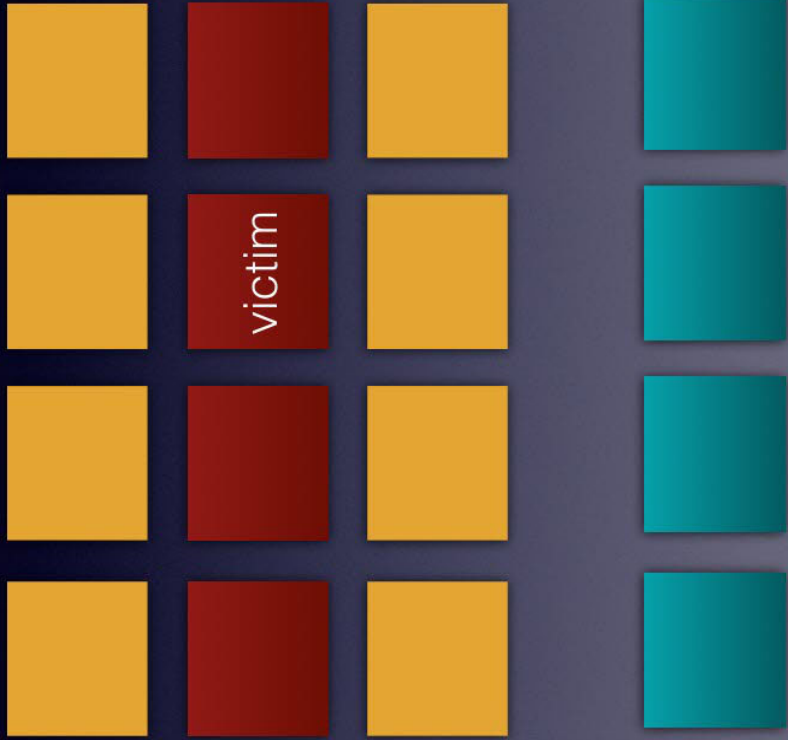
RowHammer (review)



Row Buffer

DO NOT DISTRIBUTE

RowHammer (review)



DRAM bit flip

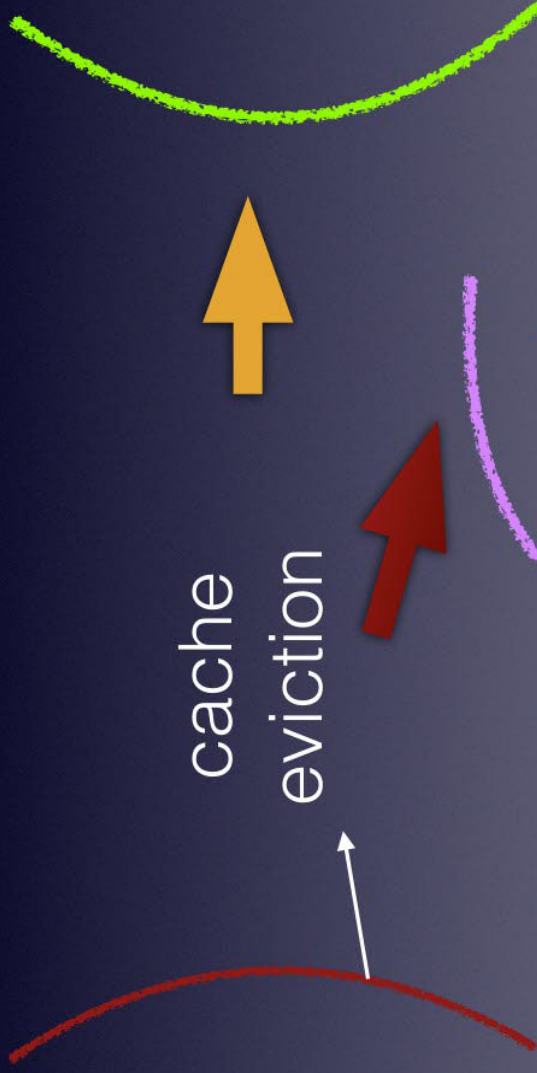
e.g., page table entry

Row Buffer

DO NOT DISTRIBUTE

Speculative Execution: A Weak Sandbox

Speculative
arbitrary code execution



(in-filtration)

Hypothetical

DO NOT DISTRIBUTE

Today's exploits



- Attack Surface
 • Attack control
- Leak Surface
 • Search side-channels

DO NOT DISTRIBUTE

Future Attacks Self-reflected



- Attack Surface
 • Leak Surface
- Attack Surface
 • Leak Surface
- Attack Surface
 • Leak Surface

Hypothetical

DO NOT DISTRIBUTE

Future Attacks Self-inflicted



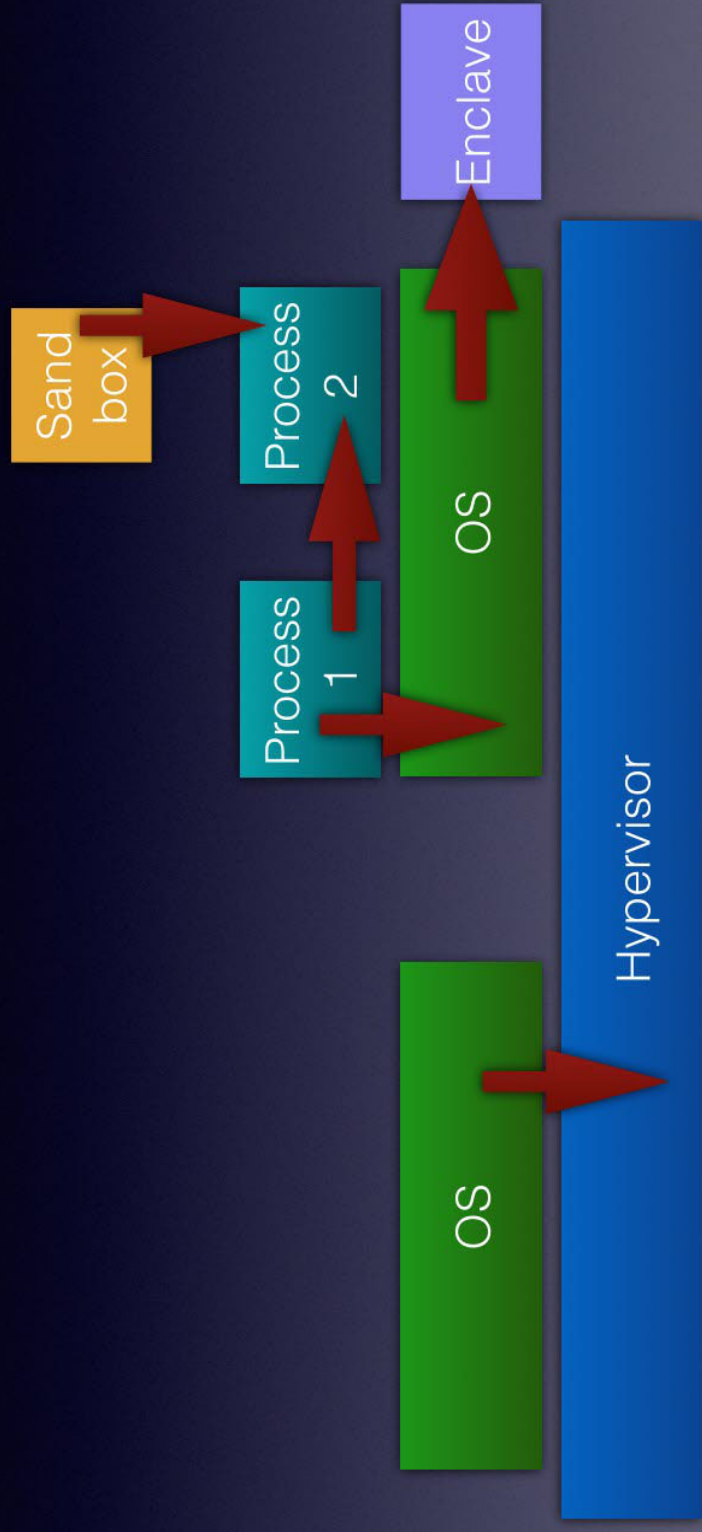
- Attack Surface
 • Leak Surface
- Leak Surface
 • Leach side-channels

Hypothetical

DO NOT DISTRIBUTE

Current Attack Scenarios

Local Information Disclosure

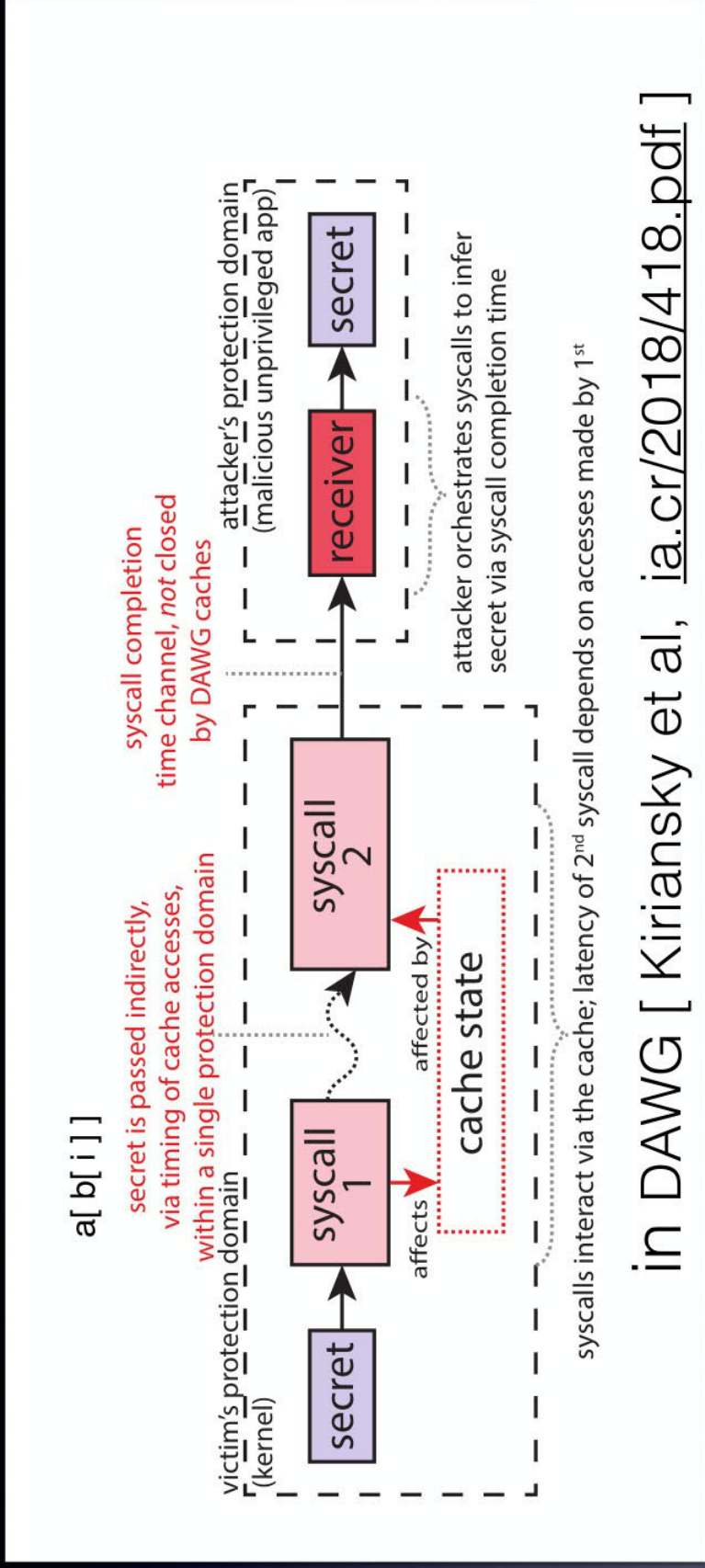


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JavaScript Sandbox Escape

DO NOT DISTRIBUTE

Remote Cache Attack



- Preparation: i s.t. the measurement lines are evicted
- Reflection: $a[b[i]]$ reflects value of `secret` in $b[i]$
- Measurement: i s.t. $b[i]$ points to known values 0-255

Hypothetical

DO NOT DISTRIBUTE

Remote DVFS

- AVX2 TurboBoost

Hypothetical

DO NOT DISTRIBUTE

Planned Weak Defenses

Coordinated Vulnerability Disclosure

- Who do we trust?
- Who is most vulnerable? Who might leak?
- Who Owns fixes?
- Can Users protect themselves?
- Who should Coordinate?

Spectre 1.1 Timeline 2018



P6 [Colwell et al '95]

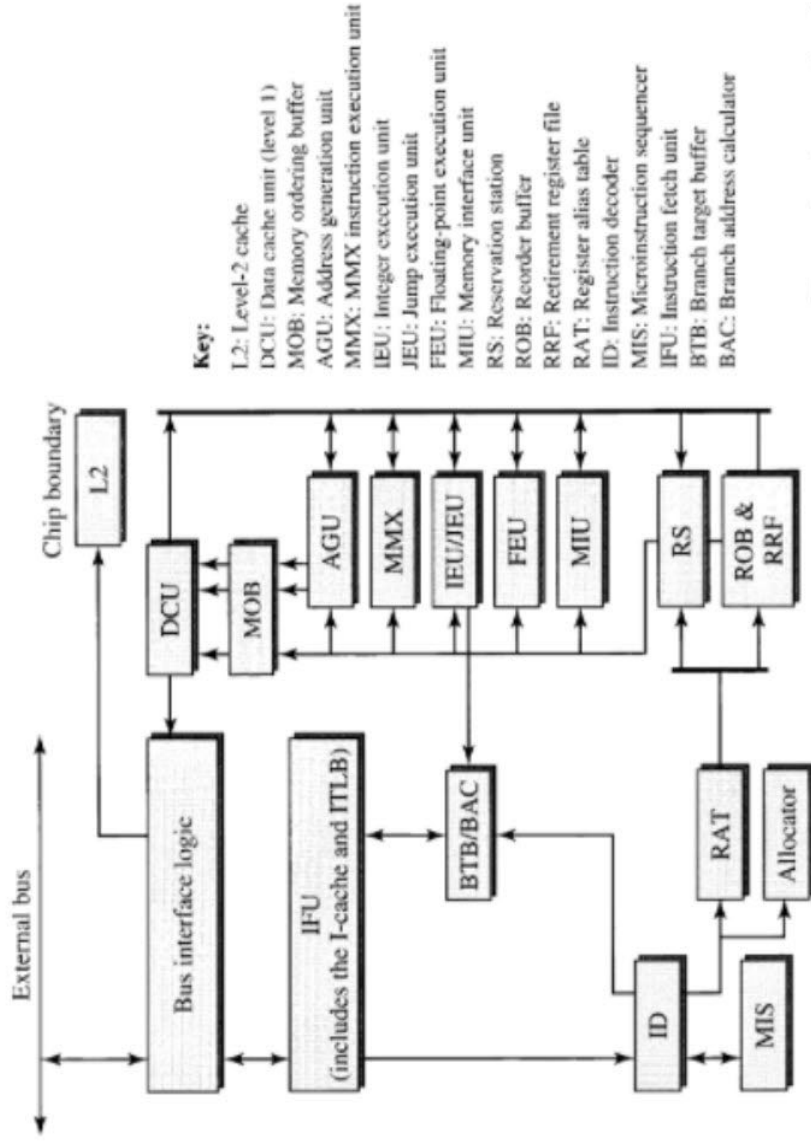


Figure 7.1

P6 Microarchitecture Block Diagram.

To maintain precise faulting semantics, the processor must ensure that asynchronous events such as interrupts and synchronous but awkward events such as faults and traps will be handled in exactly the same way as they would have in an i486 system.¹ This implies an in-order retirement process that reimposes the original program ordering to the commitment of instruction results to permanent architectural

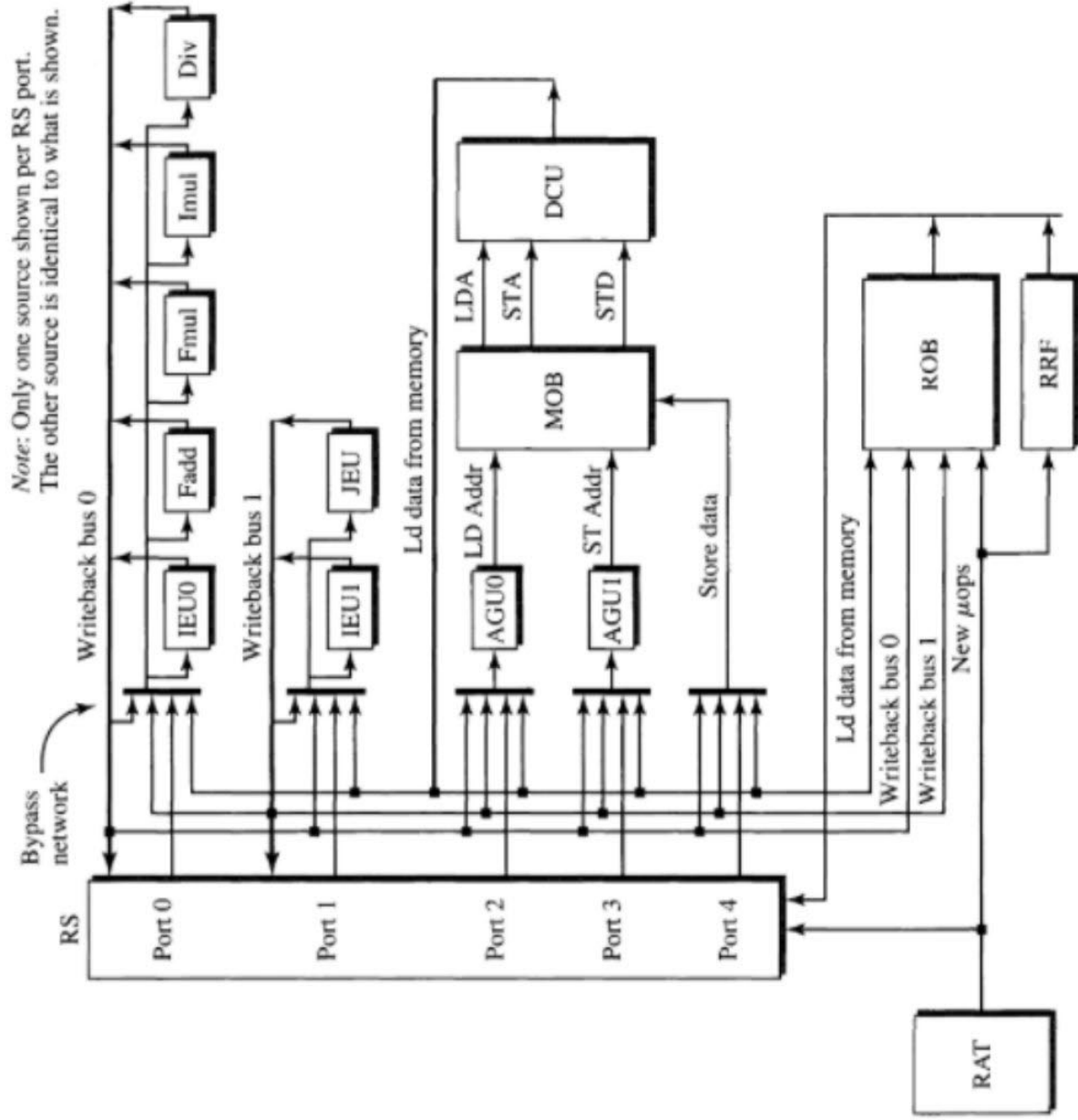


Figure 7.14
Execution Unit Data Paths.

Intel P6+ Roadmap (to Google Project Zero)

== Tomb Raider Map. Site P6 ==
PLEASE KEEP ENCRYPTED.

Reading the map in plain English:

Taking advantage of a microarchitectural optimization in

BHT [uArch]

an attacker causes a vulnerable

Gateway Write to

Mutable Indirect Code Pointer (Call*)

that leads to privileged information disclosure.

...

Please be respectful to tomb artefacts. Current technology half-life is 5 years, while these design decisions lasted 27 years and enabled the world around us.

(b)(6)

February 21, 2018

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Taxonomy: 8 attack dimensions

Enabling HW x Vulnerable SW x Target

6 x 2 x 4 x 2 x 2 x 2 x 2 x 5

February 21, 2018

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Target: Inner Dimension = Classic Buffer Overflows

- Mu/Ro: Mutable vs **Read-only**
- Di/In: Direct vs Indirect
- Co/Da: Code vs Data
- Va/Po: Value vs Pointer
 - .JCRISV - for code pointer variants
jmp*, call*, ret + irect, sysret + vmresume?
 - .ILBOV - for data attack variants
index, limit, base + object, vtable

February 21, 2018

Outer Dimension: Speculation Source

- Re/Wr/Sh/Al: Read, Write, Shadow, Alias

Alias: across or within address spaces

Shadow: same VA in different address spaces, VIPT

- Ga/Gh: Gateway vs Ghost
Gateway: attacker controls parameters
(and their *halo*) for the active invocation

Ghost: uses architecturally visible remnants
from earlier calls (on stack/heap)

February 21, 2018

Microarchitectural Units (Short List Roadmap)

- Branch outcome - BHT - Spectre1.* - *impossible paths*
- Loop trip-count (loop predictor / TAGE) - *revives Ghosts*
- RSB [RRSB - Renaming RSB] - *desynchronized RSB*
- MOB - store buffer: *senior stores (Shadow), late disambiguation (Alias, Shadow)*
- L1d - way-prediction, *[AMD microtag]: Shadow*
- MSROM: *microcode is just microops for Spectre1*

February 21, 2018

Hypothetical

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Haswell Map

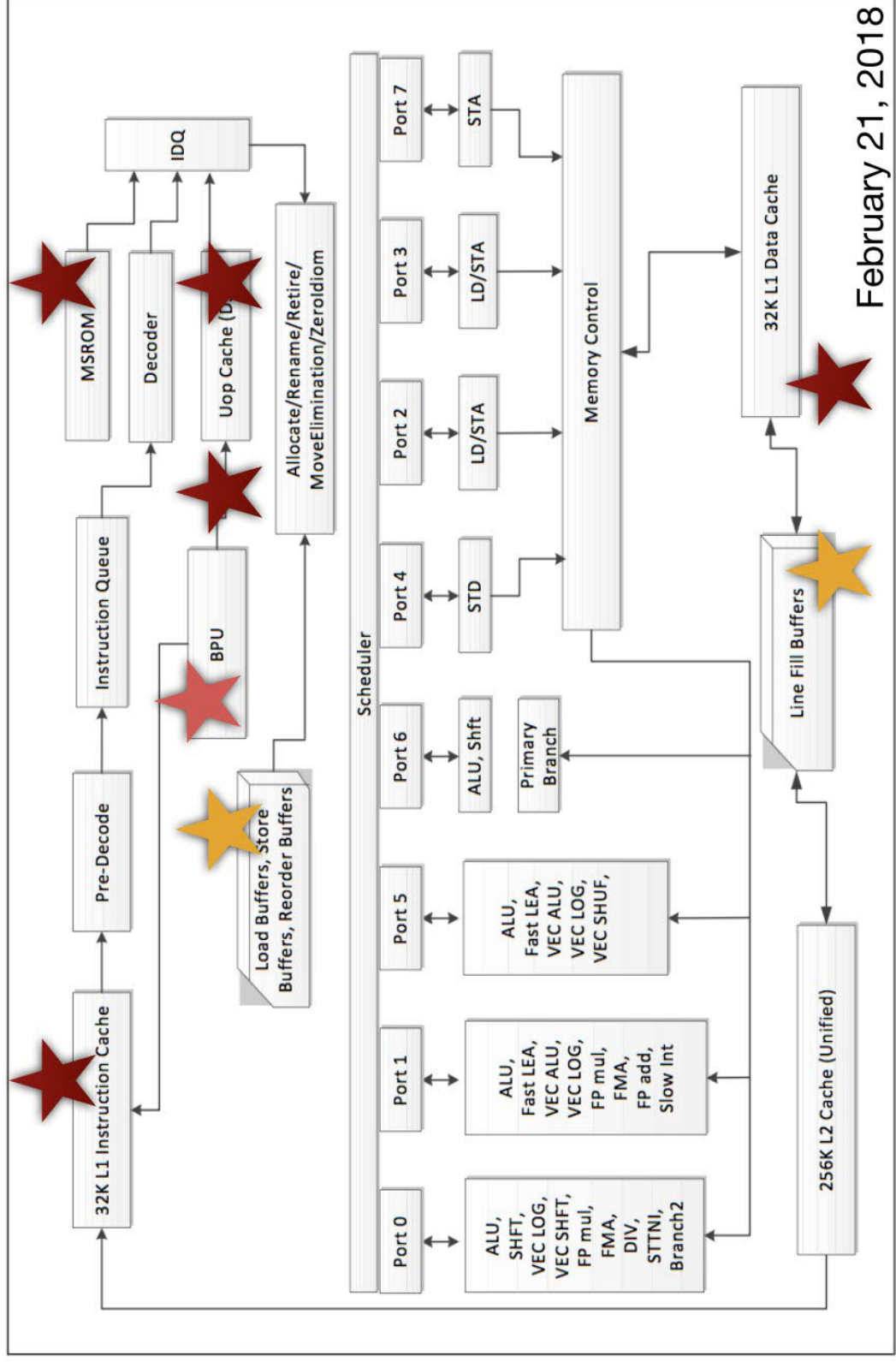
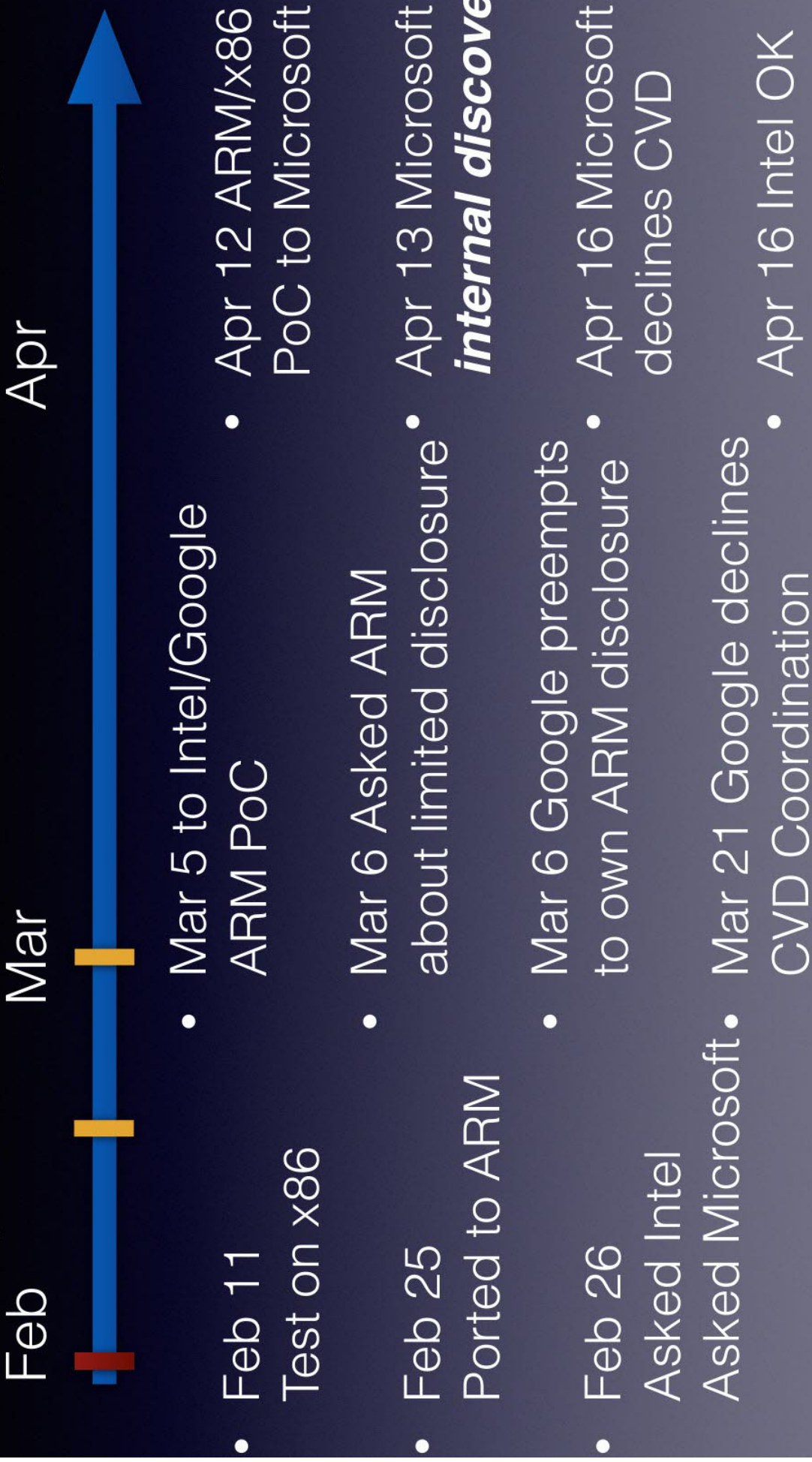


Figure 2-4. CPU Core Pipeline Functionality of the Haswell Microarchitecture

Spectre 1.1: ARM Saga



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Spectre 1.1: ARM Official



- Feb 25 Ported to ARM
- Mar 6 Existence w/o PoC to Qualcomm/NVidia
- Apr 16 to ARM [via Qualcomm]
- Apr 19 ARM: planned mitigation documentation fix
- Apr 23 ARM: plans to send to all licensees

Spectre 1.1: Second Tier

Feb12

Jun12



- Mar 29 Intel: disclosure in October

- May 8 Intel: disclosure in June!

- Yet To Notify
- May 9 to MIPS
- May 9 to IBM
- May 9 to AMD

- AMD

May 14 got PGP

ARM: Succinct Analysis

In the standard variant 1, the attacker exploits a control speculation to get a read out of range which is then used as an address in the (now) classic spectre observation channel.

What you have observed in this nice piece of work is that **the same control channel can apply to a store to allow the (temporary) speculative overwriting of the return address (or other indirect branch target)** so allowing the attacker to select what is speculatively executed next. This could allow an attacker to stimulate a spectre observation gadget.

This is clearly **expanding the mitigations that need to be applied**, but I see this as very much part of the same program of deployed mitigations on variant 1.

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Apr 19, 2018

70

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ARM: Optimistic Mitigation

Since the workaround to these issues is effectively an extension of the standard variant 1 workarounds I would very much want to communicate this with the architectural partners ASAP, and also to encourage the world's software to extend the workaround being applied for variant 1 today in the way I've described above (since people are applying those patches in some places today, and this just encourages applying them more widely).

(b)(6)

Apr 19, 2018

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prudently?

Microsoft: *Non-Disclosed*, Manual Mitigations

In our own research, we have also recognized other possible disclosure gadgets, including those along the lines of what you have described wherein conditional branch misprediction can lead to speculative execution from an attacker-controlled address (similar to variant 2).

At this time, we plan to provide guidance to developers on how to identify potentially vulnerable coding patterns (including those that you've described). We are continuing to explore opportunities for static analysis and compile-time instrumentation to assist, but we do not believe these will [be] comprehensive or sufficiently low noise in many cases.

(b)(6)

(b)(6)

Apr 13, 2018

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Manual Mitigations

- removing sensitive content from memory, use I/O
- data-dependent bounds checking
- speculation barriers (`lfence / csdb / ehb`)

Each `if` and `for` has a Separate Prediction!

```
if (n > sizeof(dst))  
    return -1;  
  
memcpy(dst, src, n);
```

n slow

Hypothetical

DO NOT DISTRIBUTE

TOCTOU?

```
for (i=0; i<n; i++)  
    x[i] ^= safe_mask;  
  
for (i=0; i<n; i++)  
    use(x[i]);
```

n slow

Hypothetical

DO NOT DISTRIBUTE

3 branches = 3 bugs?

```
// linux/net/can/bcm.c (CVE-2010-2959) redux

int bcm_tx_setup(int user_n, char* user_buf) {
    if (user_n > MAX_NFRAMES)
        return -1;

    if (user_n > 1)
        b = (frames*) kcalloc(user_n * sz); 1
    else
        b = &op->sframe; 2

    memcpy(b, user_buf, user_n * sz); 3
}
```

Hypothetical

DO NOT DISTRIBUTE

Where is the bug here?

```
void test(std::string name) {  
    std::string s("hello ");  
    s += name;  
    std::cout << s;  
}
```

Small string optimization => Stack overflow || Heap overflow

Hypothetical

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Partial Mitigations

- Ifence before malloc-like (integer overflow)
- Ifence after memcpy-like (buffer overflow)

Impractical Mitigations

- fence after every load (to protect secrets)
- fence after store
- fence before RET (to protect PC)
- fence before call
- fence before or after branch

Generic Mitigations: Control Pointer Defenses

- Reference monitors: Control Flow Guard, CET
avoiding control flow, or *fault* speculation
- "Program Shepherding" -
lock-free wait-free hashtable arcana
+branch-free +indjmp-free ... sure
- Stack Canary - easy: XOR canary delta into RA

Winners & Losers

[Paul Kocher, SiFive Tech Talk]

Intel: **↑** HW replacements, **↓** trustworthiness, **↓** legal/regulatory, **↓** more scrutiny
AMD: **↑** interest in diversification, **↓** poor response, **↓** trust (source of leaks)
ARM: **↑** crisp response, **↓** limited mitigation options, **↓** legal/regulatory
DRAM vendors: **↑** memory purchasing (more computers from slowdown + separation)
Researchers: **↑** new area and funding
Cloud vendors: **↑** compute to compensate for performance loss, **↓** perceived risk
RISC-V (open source CPU): **↑** free + transparent alternative to x86/ARM
Software vendors: – (vulnerabilities expected anyway)

https://www.youtube.com/watch?v=hqlavX_SCWc

DO NOT DISTRIBUTE

What should we disable?

- Speculative execution
- Out-of-order
- Branch prediction
- Memory ordering
- Pipeline bypassing
- Precise exceptions
- Simultaneous Multithreading
- Shared Caches
- Cache Coherence

Offensive Research

- *Offensive research offends* - threats of cuts to funding, unnamed semiconductor consortium
- Risk analysis need-to-know?
- Invest in secure-by-audit
- current silicon (both out-of-order and in-order)
- embrace likely outcome: more attacks

Defensive Research

- Sharing IP
- Academia / Government / Industry
- Tech transfer in real time
- Co-opetition? - weak market forces
- Secure-by-design
- Securely manufactured (US-soil foundries)

Papers

- *DAWG: A Defense Against Cache Timing Attacks in Speculative Execution Processors*
Vladimir Kiriansky, Iliia Lebedev, Saman Amarasinghe, Srinivas Devadas, Joel Emer
[ia.cr/2018/418.pdf](#) [under submission]
- *WoLF: Wait on Load Forwarding.*
Speculative Execution without Side-Channel Attacks
Vladimir Kiriansky, Carl Waldspurger, Joel Emer
[in preparation]

Questions & Concerns

(b)(6)
(b)(6)@csail.mit.edu

PGP Key: <http://mit.edu> (b)(6)

From: (b)(6)
To: (b)(6)
Subject: RE: (b)(4)
Date: Tuesday, August 7, 2018 3:32:57 PM
Attachments: (b)(4).pptx
(b)(4).pptx

(b)(6)

(b)(5)
(b)(5)
(b)(5) Let me know what you think.

I figured this could also be the brief for (b)(6) minus a few slides. How many slides can you rip through in 15 mins. I figured you could move pretty fast through some of the highlight slides if needed.

V/r,

(b)(6)
(b)(6) (cell)

-----Original Message-----

From: (b)(6)
Sent: Friday, July 27, 2018 9:19 AM
To: (b)(6)@darpa.mil>
Subject: Re: CCI meeting

Sure, let's do that. Put it on my calendar?

> On Jul 27, 2018, at 09:15, (b)(6)
<(b)(6)@darpa.mil> wrote:

> (b)(6)

> They came back with 22 August from 1200-1400. Would that work for you or do you want to propose a different day? I will be at my Reserve Training that week. (b)(6) is free.

> V/r,

> (b)(6)
> (b)(6) (cell)

>
>

Enhanced Attribution

(b)(6)

Information Innovation Office (I2O)

August 23, 2018





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(b)(6)

Information Innovation Office (I2O)

Briefing prepared for (b)(6)

August 23, 2018





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From: (b)(6)
To: (b)(6)
Cc: (b)(6)
Subject: RE: CENTCOM Visit on 6 July 2018: NEED to forward slide decks this Monday
Date: Friday, June 29, 2018 8:57:09 AM
Attachments: (b)(4) pptx

(b)(6)

Here are the slides for EA

V/r,

(b)(6)

Office: (b)(6)

Cell: (b)(6)

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-----Original Message-----

From: (b)(6)
Sent: Thursday, June 28, 2018 3:27 PM
To: (b)(6)@darpa.mil>; (b)(6)@darpa.mil>; (b)(6)@darpa.mil>
Cc: (b)(6)@darpa.mil>
Subject: CENTCOM Visit on 6 July 2018: NEED to forward slide decks this Monday

(b)(6)

I will need your program slides to forward to CENTCOM on this Monday.

If (b)(6) has already approved them, please forward to me now, as CENTCOM is asking if I can forward any early.

Thanks,

(b)(6)

(b)(6)

DARPA/I2O

(b)(6) (Office)

(b)(6) (Fax)

NIPR: (b)(6)@darpa.mil

SIPR: (b)(6)@darpa.smil.mil

JWICS: (b)(6)@darpa.ic.gov

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June 26, 2018





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From: (b)(6)
To: (b)(6)
Subject: RE: EA DIRO Charts
Date: Monday, October 22, 2018 9:54:00 AM
Attachments: EA Fall 2018 DIRO Program Review-md print out.pptx

(b)(6)

Here is the print out version

V/r,

(b)(6)

(b)(6) (cell)

-----Original Message-----

From: (b)(6)
Sent: Monday, October 22, 2018 8:25 AM
To: (b)(6)@darpa.mil>
Cc: (b)(6)@darpa.mil>
Subject: RE: EA DIRO Charts

Right... I'll fix

-----Original Message-----

From: (b)(6)
Sent: Monday, October 22, 2018 8:23 AM
To: (b)(6)@darpa.mil>
Cc: (b)(6)@darpa.mil>
Subject: Re: EA DIRO Charts

(b)(5)

> On Oct 22, 2018, at 08:08, (b)(6)
> (b)(6)@darpa.mil> wrote:
>
> (b)(6)
> Minor tweaks that (b)(6) and I did. Attached.

(b)(5)

> NOTE: I need the 'print' version as soon as possible (not the animated
> transition customer slide)

> (b)(6)

> (b)(6)

> Belcan Government Services
> DARPA I2O Technical Support

> (b)(6)

>

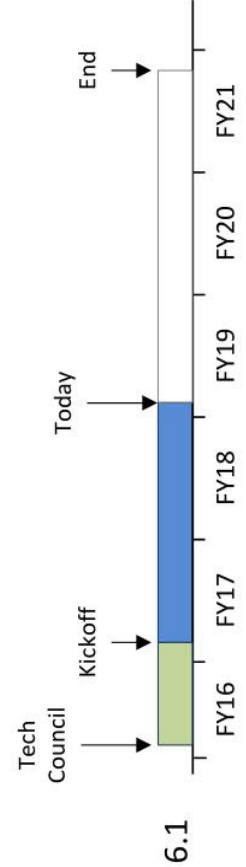
Obtained by UndeadFOIA

>

> <EA Fall 2018 DIRO Program Review-md.pptx>

Enhanced Attribution (EA)

(b)(6)



Program Review
October 25, 2018





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From: (b)(6)
To: (b)(6)
Cc: I2O Coordinators; (b)(6)
Subject: RE: I2O internal program review template
Date: Friday, June 15, 2018 8:32:16 AM
Attachments: [2018_05_09 I2O EA Program Review v4.pptx](#)

Updated slide deck for EA with financials updated.

V/r,

(b)(6)

Office: (b)(6)

Cell: (b)(6)

-----Original Message-----

From: (b)(6)
Sent: Friday, June 15, 2018 7:43 AM
To: (b)(6)@darpa.mil>; (b)(6)
(b)(6)@darpa.mil>; (b)(6)@darpa.mil>
Cc: I2O Coordinators - (b)(6)@darpa.mil>; (b)(6)
(b)(6)@darpa.mil>; (b)(6)
(b)(6)@darpa.mil>; (b)(6)
(b)(6)@darpa.mil>; (b)(6)
(b)(6)@darpa.mil>; (b)(6)
(b)(6)@darpa.mil>
Subject: RE: I2O internal program review template

Thank you

-----Original Message-----

From: (b)(6)
Sent: Thursday, June 14, 2018 8:18 PM
To: (b)(6)@darpa.mil>; (b)(6)
(b)(6)@darpa.mil>; (b)(6)
(b)(6)@darpa.mil>
Cc: I2O Coordinators - (b)(6)@darpa.mil>; (b)(6)
(b)(6)@darpa.mil>; (b)(6)
(b)(6)@darpa.mil>; (b)(6)
(b)(6)@darpa.mil>; (b)(6)
(b)(6)@darpa.mil>
Subject: RE: I2O internal program review template

Here is the updated slide deck for WASH with the financials updated.

-----Original Message-----

From: (b)(6)
Sent: Thursday, June 14, 2018 11:05 AM
To: (b)(6)@darpa.mil>; (b)(6)
(b)(6)@darpa.mil>; (b)(6)
(b)(6)@darpa.mil>
Cc: I2O Coordinators - (b)(6)@darpa.mil>; (b)(6)
(b)(6)@darpa.mil>; (b)(6)
(b)(6)@darpa.mil>

(b)(6)@darpa.mil> (b)(6)
(b)(6)@darpa.mil>; (b)(6)
(b)(6)@darpa.mil>
Subject: RE: I2O internal program review template

Please see attached deck for WASH. (b)(5)
(b)(5)

-----Original Message-----

From: (b)(6)
Sent: Wednesday, June 13, 2018 7:41 AM
To: (b)(6)@darpa.mil>; (b)(6)
(b)(6)@darpa.mil>
Cc: I2O Coordinators (b)(6)@darpa.mil>; (b)(6)
(b)(6)@darpa.mil>; (b)(6)
(b)(6)@darpa.mil>; (b)(6)
(b)(6)@darpa.mil>; (b)(6)
(b)(6)@darpa.mil>; (b)(6)
(b)(6)@darpa.mil>
Subject: FW: I2O internal program review template

Reminder -- send the internal program review slides to I2O Coordinators NLT 1200 on Jun 14.

(b)(6)

-----Original Message-----

From: (b)(6)
Sent: Wednesday, May 09, 2018 12:08 PM
To: I2O Coordinators (b)(6)@darpa.mil>
Cc: I2O-Guests (b)(6)@darpa.mil>
Subject: I2O internal program review template

All:

Please find attached the I2O internal program review template.
You should have received calendar invites for your reviews in late June.

- Plan to arrive 15 min early in case the presenter before you ends early
- It is highly recommended that the SETA team attend the reviews.
- No read-aheads are needed but slides are due to I2O Coordinators:
1200 on Jun 14 for those briefing on Jun 15
1200 on Jun 20 for those briefing on Jun 21 and 22
1200 on Jun 27 for those briefing on Jun 28 and 29

Thanks,

(b)(6)

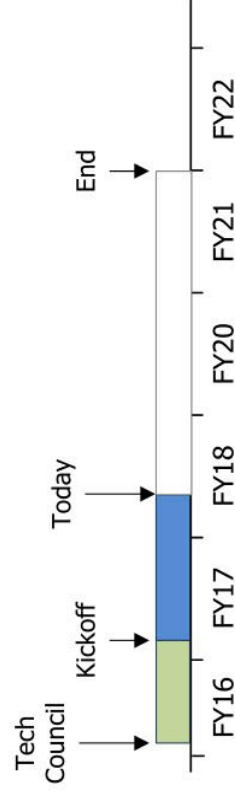
(b)(6)

Belcan Government Services
DARPA I2O Technical Support

(b)(6)

Enhanced Attribution (EA) Program Review

(b)(6)



Dr. Brian Pierce
Director, Information Innovation Office (I2O)

June 2018



Obtained by UndeadFOIA

(b)(4), (b)(5)



www.darpa.mil

From: (b)(6)
To: [I2O Coordinators](#)
Cc: (b)(6)
Subject: RE: I2O internal program review template
Date: Thursday, June 14, 2018 2:01:02 PM
Attachments: [2018 05 09 I2O EA Program Review v4.pptx](#)

All,

Please use this version, I made a typo on the title page.

V/r,

(b)(6)

Office: (b)(6)

Cell: (b)(6)

-----Original Message-----

From: (b)(6)
Sent: Thursday, June 14, 2018 12:21 PM
To: I2O Coordinators <(b)(6)@darpa.mil>
Cc: (b)(6)@darpa.mil>; (b)(6)
(b)(6)@darpa.mil>; (b)(6)
(b)(6)@darpa.mil>
Subject: RE: I2O internal program review template

I2O Coordinators,

Please find (b)(6) Enhanced Attribution Program Review slides attached.

V/r,

(b)(6)

DARPA I2O SETA

Office: (b)(6)

Cell: (b)(6)

-----Original Message-----

From: (b)(6)
Sent: Wednesday, June 13, 2018 7:41 AM
To: (b)(6)@darpa.mil>; (b)(6)
(b)(6)@darpa.mil>
Cc: I2O Coordinators <(b)(6)@darpa.mil>; (b)(6)
(b)(6)@darpa.mil>; (b)(6)
(b)(6)@darpa.mil>; (b)(6)
(b)(6)@darpa.mil>; (b)(6)
(b)(6)@darpa.mil>; (b)(6)
(b)(6)@darpa.mil>
Subject: FW: I2O internal program review template

Reminder -- send the internal program review slides to I2O Coordinators NLT 1200 on Jun 14.

(b)(6)

-----Original Message-----

From: (b)(6)
Sent: Wednesday, May 09, 2018 12:08 PM
To: I2O Coordinators <(b)(6)@darpa.mil>
Cc: I2O-Guests <(b)(6)@darpa.mil>
Subject: I2O internal program review template

All:

Please find attached the I2O internal program review template.
You should have received calendar invites for your reviews in late June.

- Plan to arrive 15 min early in case the presenter before you ends early
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1200 on Jun 14 for those briefing on Jun 15
1200 on Jun 20 for those briefing on Jun 21 and 22
1200 on Jun 27 for those briefing on Jun 28 and 29

Thanks,

(b)(6)

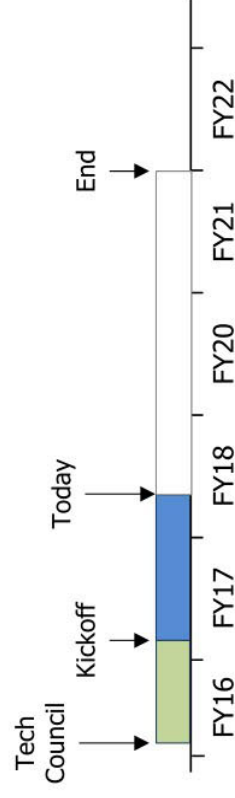
(b)(6)

Belcan Government Services
DARPA I2O Technical Support

(b)(6)

Enhanced Attribution (EA) Program Review

(b)(6)



Dr. Brian Pierce
Director, Information Innovation Office (I2O)

June 2018



Obtained by UndeadFOIA

(b)(4), (b)(5)



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From: (b)(6)
To: [I2O Coordinators](#)
Cc: (b)(6)
Subject: RE: I2O internal program review template
Date: Thursday, June 14, 2018 12:21:26 PM
Attachments: [2018 05 09 I2O EA Program Review v3.pptx](#)

I2O Coordinators,

Please find (b)(6) Enhanced Attribution Program Review slides attached.

V/r,

(b)(6)

Office: (b)(6)

Cell: (b)(6)

-----Original Message-----

From: (b)(6)
Sent: Wednesday, June 13, 2018 7:41 AM
To: (b)(6)@darpa.mil>; (b)(6)
(b)(6)@darpa.mil>
Cc: I2O Coordinators <(b)(6)@darpa.mil>; (b)(6)
(b)(6)@darpa.mil>; (b)(6)
(b)(6)@darpa.mil>; (b)(6)
(b)(6)@darpa.mil>; (b)(6)
<(b)(6)@darpa.mil>; (b)(6)
<(b)(6)@darpa.mil>
<(b)(6)@darpa.mil>

Subject: FW: I2O internal program review template

Reminder -- send the internal program review slides to I2O Coordinators NLT 1200 on Jun 14.

(b)(6)

-----Original Message-----

From: (b)(6)
Sent: Wednesday, May 09, 2018 12:08 PM
To: I2O Coordinators <(b)(6)@darpa.mil>
Cc: I2O-Guests <(b)(6)@darpa.mil>
Subject: I2O internal program review template

All:

Please find attached the I2O internal program review template.
You should have received calendar invites for your reviews in late June.

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- It is highly recommended that the SETA team attend the reviews.
- No read-aheads are needed but slides are due to I2O Coordinators:
1200 on Jun 14 for those briefing on Jun 15
1200 on Jun 20 for those briefing on Jun 21 and 22

1200 on Jun 27 for those briefing on Jun 28 and 29

Thanks,

(b)(6)

(b)(6)

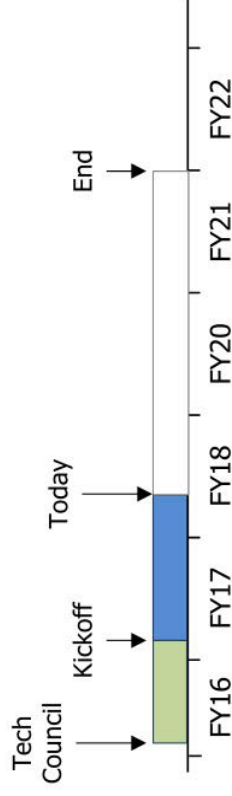
Belcan Government Services

DARPA I2O Technical Support

(b)(6)

Enhanced Attribution (EA) Program Review

(b)(6)



Dr. Brian Pierce
Director, Information Innovation Office (I2O)

June 2018





www.darpa.mil

From: (b)(6)
To: (b)(6)
Subject: RE: Mueller analysis metrics
Date: Wednesday, October 3, 2018 8:41:22 AM
Attachments: (b)(4).pptx

Here are the new slides- instead of adding a new slide, I thought we could add it to the existing one about overlapping campaigns/groups. Let me know if this is good.

V/r,

(b)(6)
(b)(6) (cell)

-----Original Message-----

From: (b)(6)
Sent: Monday, October 1, 2018 2:38 PM
To: (b)(6)@darpa.mil>
Subject: Re: Mueller analysis metrics

(b)(5)

> On Oct 1, 2018, at 14:36, (b)(6)
<(b)(6)@darpa.mil> wrote:

>

> All,

>

(b)(5)

>

> V/r,

>

> (b)(6)

> (b)(6) (cell)

>

>

Obtained by UndeadFOIA

(b)(5), (b)(6)



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From: (b)(6)
To: (b)(6)
Subject: (b)(4)
Date: Friday, June 22, 2018 4:02:25 PM
Attachments: (b)(4)

(b)(6)

(b)(4)

V/r,

(b)(6)

Office: (b)(6)

Cell: (b)(6)

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Sept 5 - 7, 2018 - Washington, D.C.
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<https://D60.DARPA.MIL>

-----Original Message-----

From: (b)(6)
Sent: Friday, June 22, 2018 8:58 AM
To: (b)(6)@darpa.mil>
Subject: (b)(4)

Yup

> On Jun 22, 2018, at 08:29, (b)(6)
<(b)(6)@darpa.mil> wrote:

(b)(4)

>
>
>

> -----Original Message-----

> **From:** (b)(6)
> **Sent:** Friday, June 22, 2018 8:21 AM
> **To:** (b)(6)@darpa.mil>
> **Subject:** (b)(4)

(b)(4)

[redacted] (b)(4)

>> On Jun 21, 2018, at 15:38, [redacted] (b)(6)
>> [redacted] (b)(6)@darpa.mil> wrote:

>> [redacted] (b)(6)

[redacted] (b)(4)

[redacted] (b)(4)

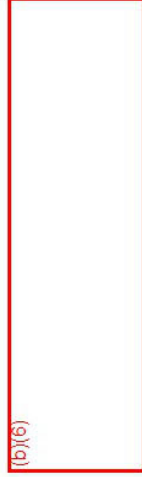
>> V/r,
>> [redacted] (b)(6)

>> Office: [redacted] (b)(6)
>> Cell: [redacted] (b)(6)

>> DARPA's 60th Anniversary Symposium
>> Sept 5 - 7, 2018 - Washington, D.C.
>> Join us to explore DARPA's next 60 years - Register now at:
>> [hxxps://D60.DARPA.MIL](https://D60.DARPA.MIL)
>>
>>

Enhanced Attribution

(b)(6)



Information Innovation Office (I2O)

(b)(4)



April 12, 2018





www.darpa.mil

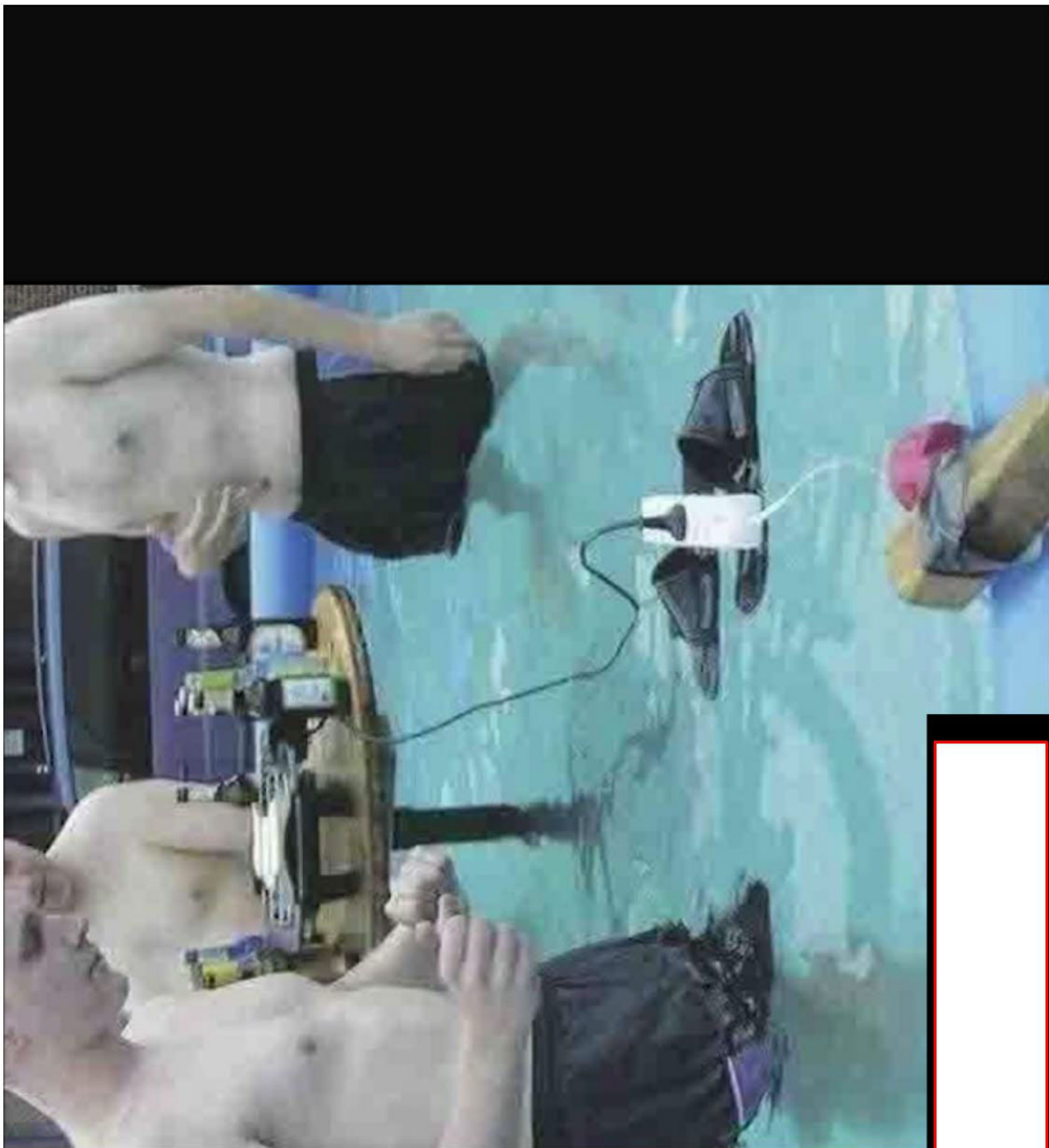
Enhanced Attribution

(b)(6)

Information Innovation Office (I2O)

June 26, 2018





(b)(4)



(b)(4)



(b)(4)



Transition

Enhanced Attribution

(b)(6)

Information Innovation Office (I2O)

(b)(4), (b)(6)

(b)(4)

June 26, 2018





www.darpa.mil

From: (b)(6)
To: (b)(6)
Subject: RE: (b)(4), (b)(6)
Date: Tuesday, December 11, 2018 2:53:42 PM
Attachments: [LO5D.pptx](#)

V/r,

(b)(6)
(b)(6)
(b)(6) (office)
(b)(6) (cell)

-----Original Message-----

From: (b)(6)@darpa.mil>
Sent: Tuesday, December 11, 2018 2:52 PM
To: (b)(6)@darpa.mil>
Subject: RE: (b)(4), (b)(6)

Yes, can you send me the PowerPoint version?

(b)(6)
(b)(4), (b)(6)
Tel: (b)(6)
Fax: (b)(6)
Email: (b)(6)@darpa.mil

-----Original Message-----

From: (b)(6)@darpa.mil>
Sent: Tuesday, December 11, 2018 2:49 PM
To: (b)(6)@darpa.mil>
Subject: RE: (b)(4), (b)(6)

(b)(6)

Is PDF ok? I have a pptx as well

V/r,

(b)(6)
(b)(6)
(b)(6) (office)
(b)(6) (cell)

-----Original Message-----

From: (b)(6)@darpa.mil>
Sent: Tuesday, December 11, 2018 2:43 PM
To: (b)(4), (b)(6) (b)(6)

(b)(6)@darpa.mil>
Cc: (b)(6)@darpa.mil>; (b)(6)
(b)(6)@darpa.mil>
Subject: RE: (b)(4), (b)(6)

(b)(4),
(b)(6)

Any updates on your slides for tomorrow?

(b)(6)

(b)(6)

Tel: (b)(6)

Fax:

Email: (b)(6)@darpa.mil <mailto:(b)(6)@darpa.mil>

From: (b)(6)

Sent: Tuesday, December 11, 2018 10:55 AM

To: (b)(4), (b)(6) (b)(6)

<(b)(6)@darpa.mil>

Cc: (b)(6)@darpa.mil>

Subject: RE: (b)(4), (b)(6)

Hi (b)(6)

Can you forward (b)(4) program slides to (b)(6) and I? Please and thank you!

(b)(6)

(b)(6)

Belcan Government Services

Tel: (b)(6)

Fax:

Email: (b)(6)@darpa.mil <mailto:(b)(6)@darpa.mil>

From: (b)(4), (b)(6) <mailto:(b)(4), (b)(6)> >
Sent: Tuesday, December 11, 2018 10:53 AM
To: (b)(6)@darpa.mil
<mailto:(b)(6)@darpa.mil> >; (b)(6)
<(b)(6)@darpa.mil <mailto:(b)(6)@darpa.mil>
>
Cc: (b)(6)@darpa.mil
<mailto:(b)(6)@darpa.mil> >
Subject: (b)(4), (b)(6)

(b)(6)

I am having trouble emailing the slides for tomorrow's presentation. DARPA ITD has provided me with a DARPA Box account but the only person I found to have an account is (b)(6) so I have sent the slides to him via Box.

If this is not acceptable please let me know alternatives and I'll work on them.

The complications is the PPTX and PDF are over 20 MB each and contains some images that are Distribution C and Distribution F.

Regards,

(b)(4), (b)(6)

From: (b)(6)
To: (b)(6)
Cc: [I2O Coordinators](#); (b)(6)
Subject: updated DIRO Slides
Date: Thursday, October 11, 2018 9:01:22 PM
Attachments: [2018-I2O TriCharts EA.pptx](#)
[2018 EA DIRO Program Review.pptx](#)

(b)(6)

I placed updated EA Slides (also attached) for the DIRO review and Tri-Chart in the 2018 DIRO Program Review Folder.

V/r,

(b)(6)

Office: (b)(6)

Cell: (b)(6)

DARPA's 60th Anniversary Symposium
Sept 5 - 7, 2018 - Washington, D.C.
Join us to explore DARPA's next 60 years - Register now at:
<https://D60.DARPA.MIL>

(b)(6), (b)(3):10 USC 130e, (b)(3):50 U.S.C. § 3024(i)(1)

(b)(3):10 USC 130e, (b)(3):50 U.S.C. § 3024(i)(1)

(b)(4), (b)(7)(E), (b)(3):10 USC 130e, (b)(3):50 U.S.C. § 3024(i)(1)

