~~SECRET//TK//REL TO FVEY~~

NATIONAL RECONNAISSANCE OFFICE

(U) Future Lab Architecture
[GEOHUB & SIGHUB]

MOD-Operations Innovation

23 April 2015

25-Year Non-Satellite related classified information
CL BY:
DECL O
DRV FM

SUPRA ET ULTRA

(b)(3)

Approved for Release: 2020/06/08 C05126133

Approved for Release: 2020/06/08 C05126133

Approved for Release: 2020/06/08 C05126133

(U) What is GEOHUB/SIGHUB?

- *(U) Consolidation of disparate R&D enclaves across the MOD Operations Innovation [OI] Enterprise into a single common environment...*
  - ***(U) GEOHUB = USA ONLY***
    - *WIC, SWIC, MIC Specials Enclave, *STWAN [R&D aspects at Denver]*
  - ***(U) SIGHUB = REL TO USA, FVEY***
    - *CSURF, CSAND, SSE Lab, SAND, PIT, MIC, *XSAF [NRO unique services]*

Approved for Release: 2020/06/08 C05126133

Approved for Release: 2020/06/08 C05126133

(U) Why are we doing this?

- *(U) We need a common, cross-site collaborative, development environment to achieve our cross-site matrixing and cross-aperture objectives…*
- *(U) The commodity environments will not address our Overheard RF and R&D needs [in the near future]…*
- *(U) We need to be more efficient and can't afford to maintain all our current legacy environments…*
- *(U) We need to have an air-tight security posture and be in line with our mission partners [in particular NSA].*
- *(U) We need to be agile as we chase dynamic intel priorities*

Approved for Release: 2020/06/08 C05126133

(U) Expectations [Part 1]

- *(U) An OI developer can TDY to any ground satiation or remote in from any factory SCIF and instantly access their development environment.*
- *(U) Every developer has access to the same datasets, tools and processors [they are cleared for]…in real time.*
- *(U) A user can reach out to our Unique Infrastructure Team at any MGS's for support.*
- *(U) A user can spin up a machine and kick-off new projects in minutes [MK370 Crisis]*
- [redacted]

(b)(1)
(b)(3)

Approved for Release: 2020/06/08 C05126133

Approved for Release: 2020/06/08 C05126133

(U) Expectations [Part 2]

- *(U) A developer can satisfy their most extensive processing requirement within this environment* [redacted]
- *(U) A lab chief can decide to expose a prototype to any IC environment [CWE, NSANet, JWICS] in a timely fashion.*
- *(U) The entire enterprise can leverage any procurement of commercial software from any of the sites [floating licenses].*
- *(U) Redundancy will be built in where an issue at one-site can be temporarily mitigated by the others.*
- *(U) The US and FVEY enclaves are tightly coupled and transactions happen in an automated fashion.*

(b)(3)

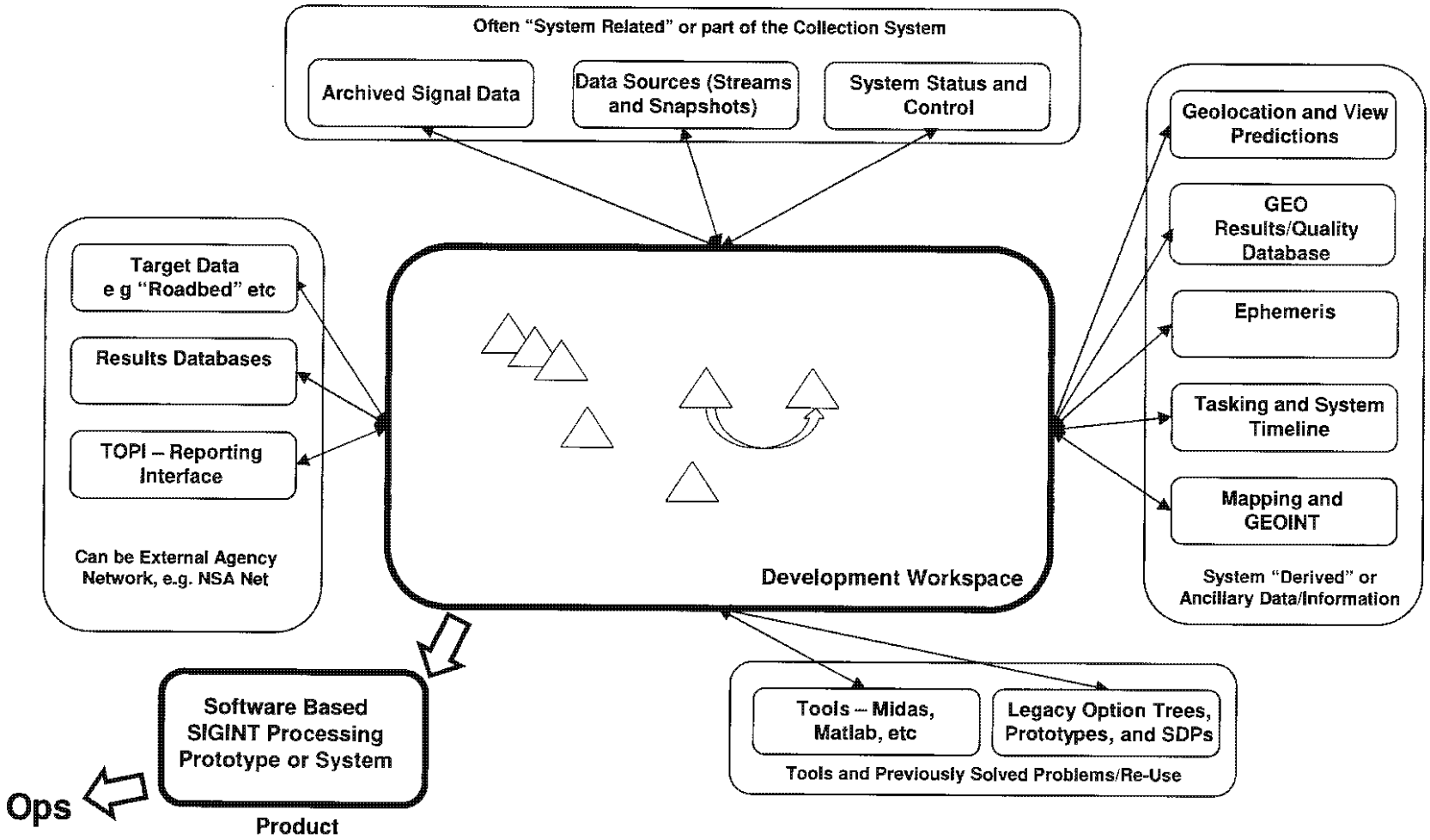
Approved for Release: 2020/06/08 C05126133

Approved for Release: 2020/06/08 C05126133

Approved for Release: 2020/06/08 C05126133

(U) Developer "Requirements"

Successful Development Requires Access To and Manipulation Of Diverse Elements



Approved for Release: 2020/06/08 C05126133

Approved for Release: 2020/06/08 C05126133

(U) SIGHUB Core Components

(U) ICD-503 Compliant Admin/Mgmt functions to include continuous monitoring

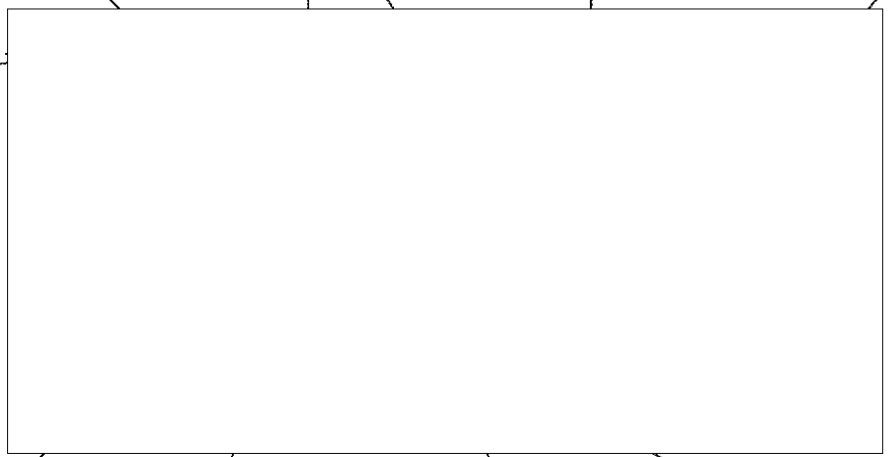
(U) Local and cross-site storage options

(U) Multi-tiered Virtual Desktop Infrastructure

~~(U//FOUO)~~ 24/7 Development factory access via VDI only to ensure no unauthorized raw data movement

(b)(1)
(b)(3)

(U) Efficient use of existing site resources to ensure cohesive data representation between Labs and OPS



(U) Logically isolated "black-box" zone for testing unique hardware products

(U) 10G non-blocking Network Core

(U) Use of Cross-Site "best-effort" comms

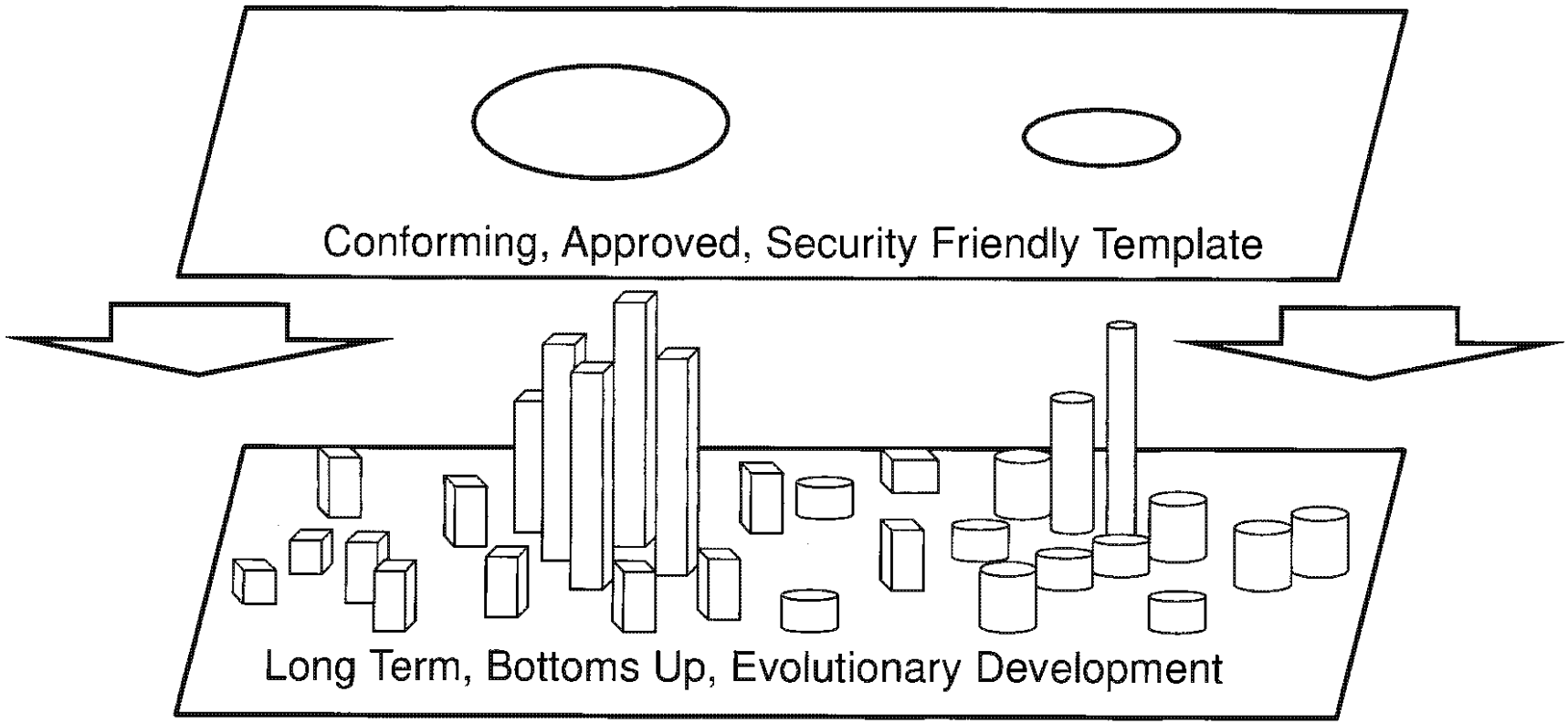
(U) Central compute manager to ensure dynamic provisioning including bare-metal resources for high-resource utilization development

Approved for Release: 2020/06/08 C05126133

Approved for Release: 2020/06/08 C05126133

~~SECRET//TK//REL TO FVEY~~

(U) Protected Architecture



~~SECRET//TK//REL TO FVEY~~

Approved for Release: 2020/06/08 C05126133

Approved for Release: 2020/06/08 C05126133

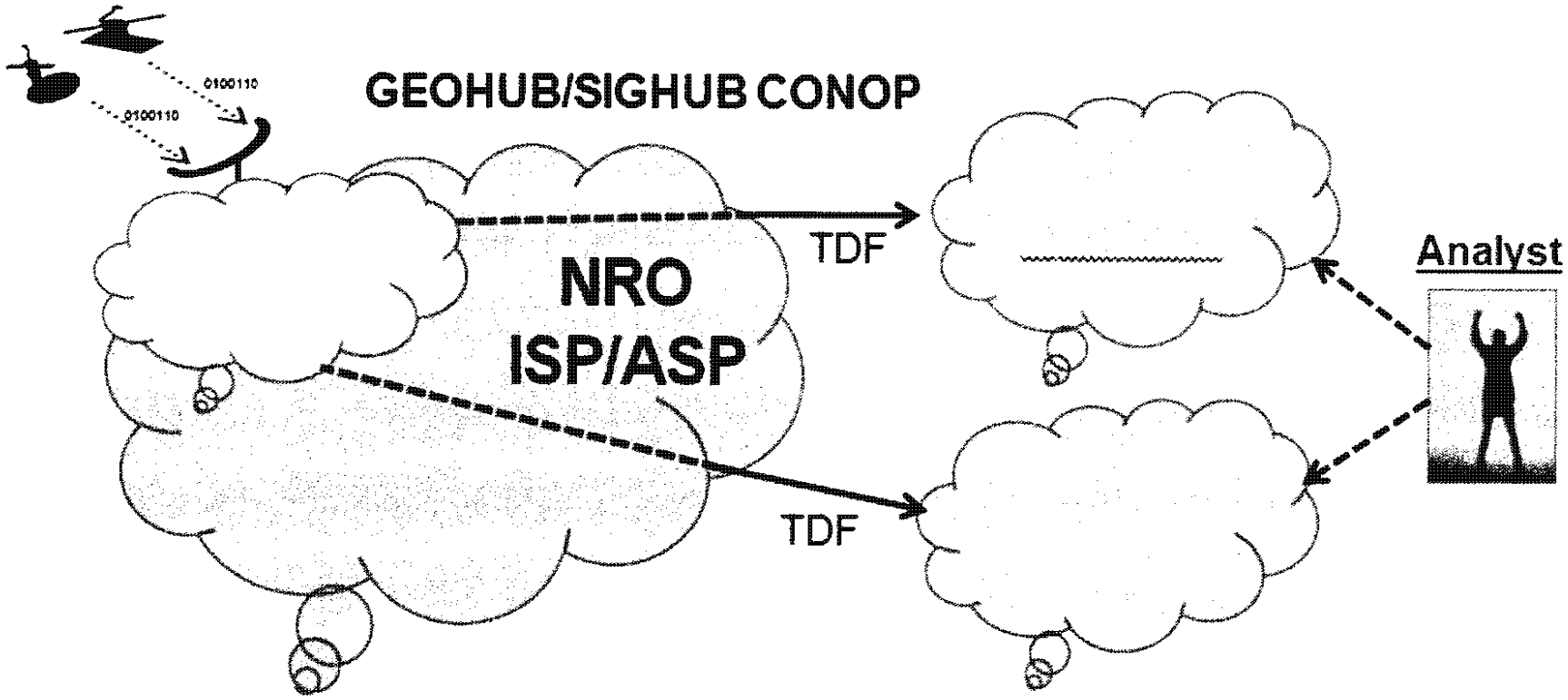
(b)(1)
(b)(3)

Page Denied

Approved for Release: 2020/06/08 C05126133

Approved for Release: 2020/06/08 C05126133

(U) GEOHUB/SIGHUB Mission Space



Approved for Release: 2020/06/08 C05126133

Approved for Release: 2020/06/08 C05126133

(b)(1)
(b)(3)

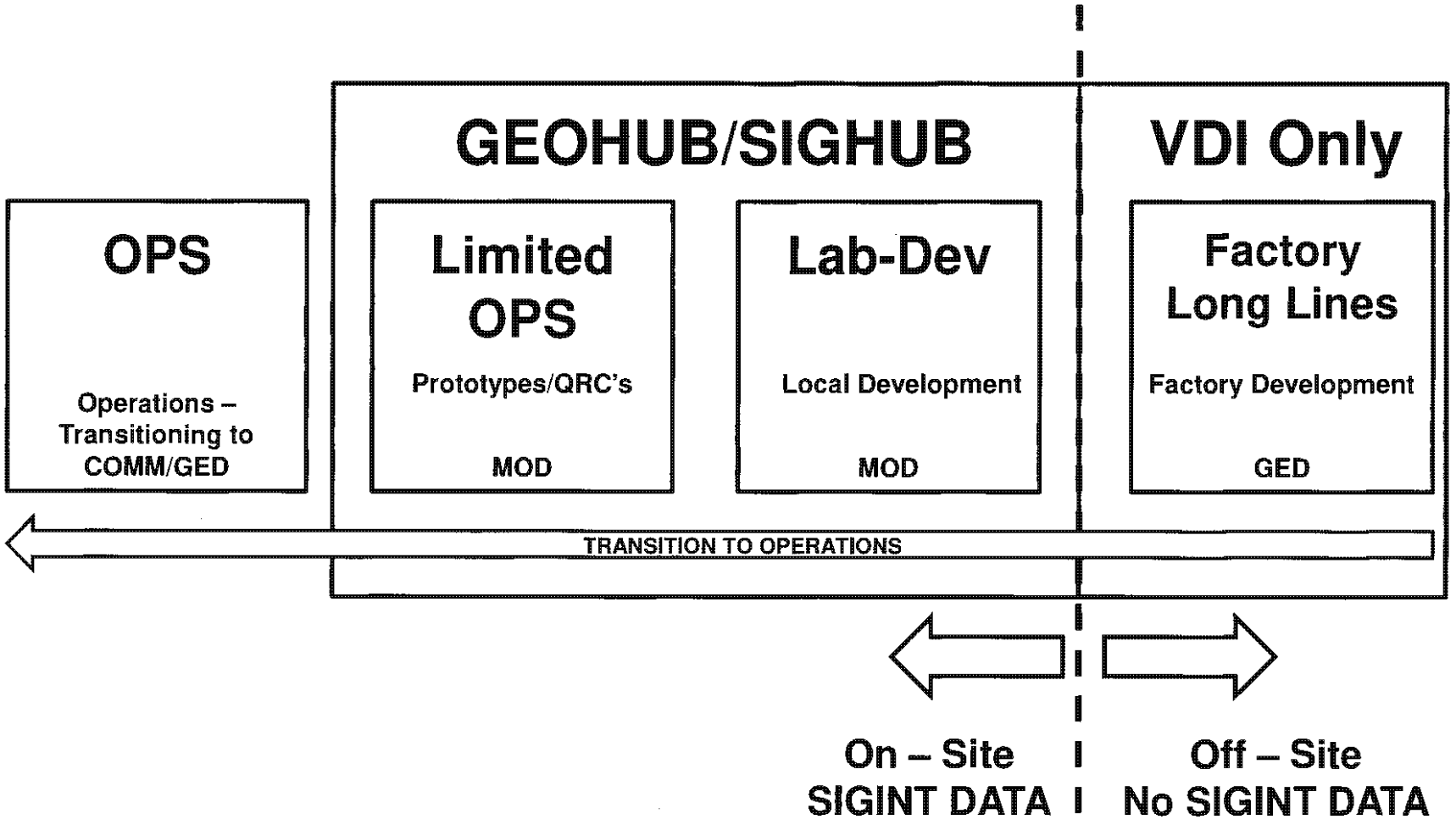
Page Denied

Approved for Release: 2020/06/08 C05126133

Approved for Release: 2020/06/08 C05126133

~~SECRET//TK//REL TO FVEY~~

(U) Development & Limited Ops



Note: Factories that need Pre-D SIGINT locally will use Tribal Fire

~~SECRET//TK//REL TO FVEY~~

Approved for Release: 2020/06/08 C05126133

Approved for Release: 2020/06/08 C05126133

(b)(1)
(b)(3)

Page Denied

Approved for Release: 2020/06/08 C05126133

Approved for Release: 2020/06/08 C05126133

(U) Schedule

- (U) All GEOHUB systems are installed and ready for use
- (U) SIGHUB-H and SIGHUB-C is waiting for final network connectivity with CSL-1
  - [redacted]

(b)(1)
(b)(3)

- (U) Multi-year effort to transition legacy into GEOHUB & SIGHUB.
- (U) Series of RFC's in work for robust GEOINT data access
  - (U) MOPO-165 (Wideband GEOINT)
  - (U) MOPO-168 (Narrowband GEOINT)
  - (U) MOPO-175 (OPIR)

Approved for Release: 2020/06/08 C05126133

Approved for Release: 2020/06/08 C05126133

(U) Critical Partners

- (U) Project Lead & Development
- (U) Major Resource Contributor
- (U) Integration, Administration and Management

- (U) Engineering Support & Resources
- (U) Co-consumer of SIGHUB Environment
- (U) GED Support [WBA changes, CTF, NSA Partnerships]

- (U) SIGINT Compliance guidance
- (U) RESOLVE-TURMOIL connectivity
- (U) Engineering Oversight & REDHAWK Framework

- (U) Compliance Services & Ordering Capability
- (U) Existing Functionality [MHE & AlphaPIE]
- (U) Engineering Expertise and OPS Services

- (U) Hardware Infrastructure & Software Stacks
- (U) Engineering Support
- (U) Data Sources & Connectivity

- (U) GEOINT Science and Domain Knowledge
- (U) Existing Functionality, connectivity and data access
- (U) Engineering Expertise

Approved for Release: 2020/06/08 C05126133

Approved for Release: 2020/06/08 C05126133

(b)(1)
(b)(3)

Page Denied

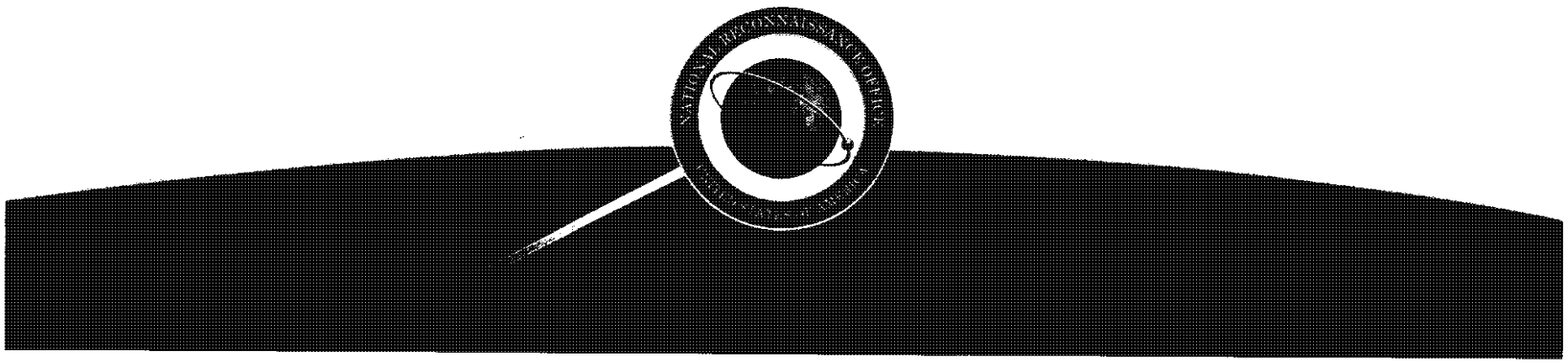
Approved for Release: 2020/06/08 C05126133

Approved for Release: 2020/06/08 C05126133

~~SECRET//TK//REL TO USA, FVEY~~

NATIONAL RECONNAISSANCE OFFICE

SUPRA ET ULTRA



Approved for Release: 2020/06/08 C05126133