

(U//FOUO) Net Defense from Encrypted Communications

February 2012



Increment 3 Requirement

SYSREQ10322.2

(S//REL) TURMOIL shall reinject decrypted IP traffic into BLUESNORT for malicious network activity detection.

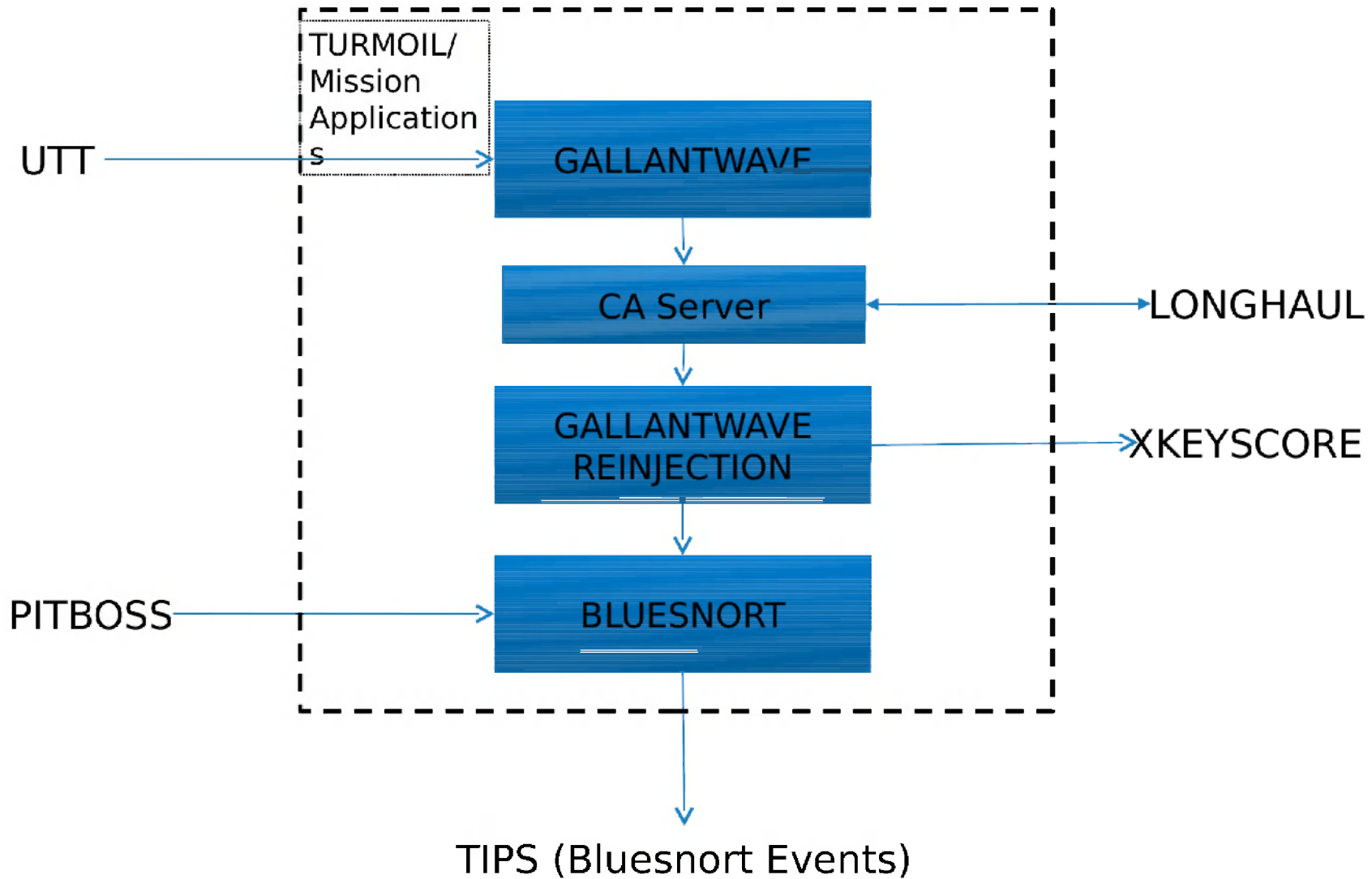
Three-Feather Solution

1. *GALLANTWAVE application*
 - *Same module supports NetDef and SIGINT*
 - *Supports dynamic update of targeting via UTT*
 - *Supports static target updates*

2. *GALLANTWAVE Reinjection application*
 - *Same module supports NetDef and SIGINT*
 - *Supports re-injection of decrypt into TURMOIL for detection by BLUESNORT*

3. *BLUESNORT in Stage 1 Prime application*
 - *Emits events off decrypted, re-packetized, reinjected data*

HIGH Level Data Flow Net Defense and SIGINT sites



Status

- Running on MHS DEV ESO T5 and T22
- Transform, Reinjection, Signature Hits confirmed
- Signatures need further development to produce true hits vs. false positives
- NTOC POC reviewing XKS hits to generate new signatures.

Issues/Risks

1. *CA Servers at Net Defense Sites*
 - a) *ITx Connectivity to LONGHAUL*
 - b) *NTOC requires stand-up of separate dev and live ITx fabric*
 - i. *- H/W funding may be needed*
 - ii. *- Need paperwork for update to firewall - submission expected by 25 Feb*
 - c) *Expected completion was 29 Feb; now delayed to TBD*
 - d) *SSH connectivity*
 - e) *Short term: via BLUEBOX CA Servers at Pentagon - done*
 - f) *Longer term: via deployment of servers within the NTOC enclave that connect to CA Servers in the field*
2. *GALLANTWAVE Targeting Challenges*
 - a) *MAILORDER/Ni-FI not yet available*
 - b) *Mitigation: Manually load static targeting files*

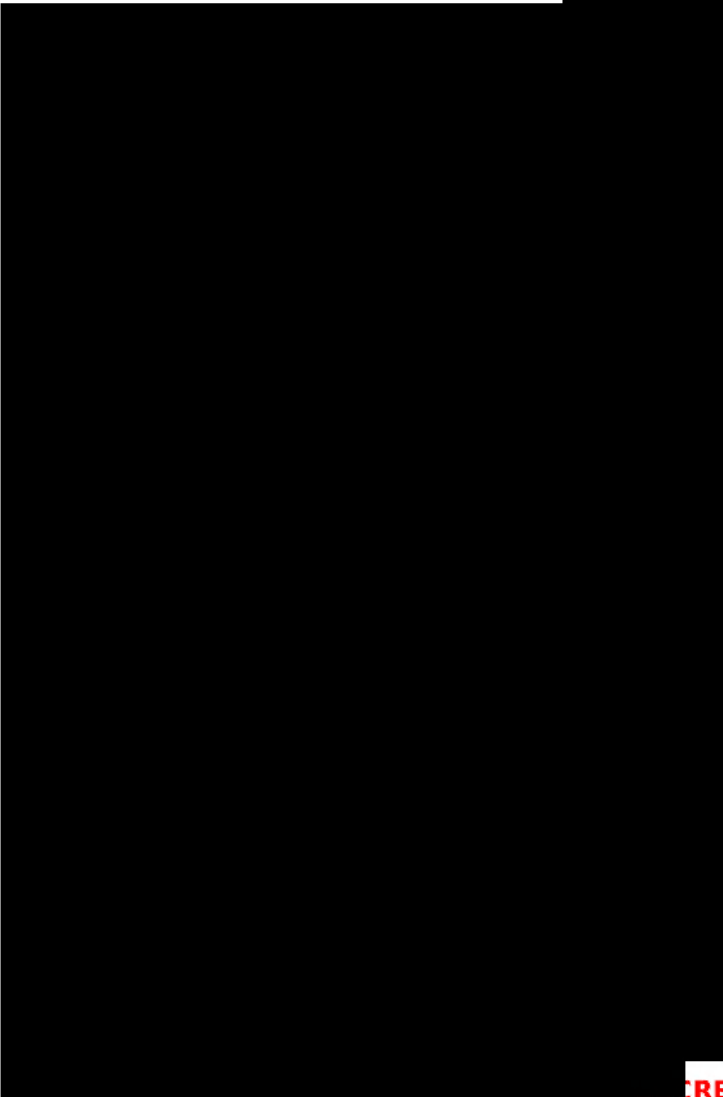
CA Capabilities Planned for NCC-3 Test Events

Capability	DT/OA 2 (June 2012)		DT/OA 3 (June 2013)	
	Defensive Sensor	SIGINT Sensor	Defensive Sensor	SIGINT Sensor
CA Reinjection	No	DGO	TTENT	DGO

Near-term Schedule

Capability	Date
GW-R Gate 2	Done (15 Feb)
GW-R Gate 3	Done (29 Feb)
GW-R Gate 5	31 Mar
GW-R Deploy to U sites	May
ITx Dev Fabric at NetDef sites	29 Feb +
CA Server ssh connectivity	Done via Bluebox
Initial Live Dev Test TURTLEZOO	~May
GW-R Core 4.0	May
GW Core 4.0	May
ITx Live Fabric	TBD


Players



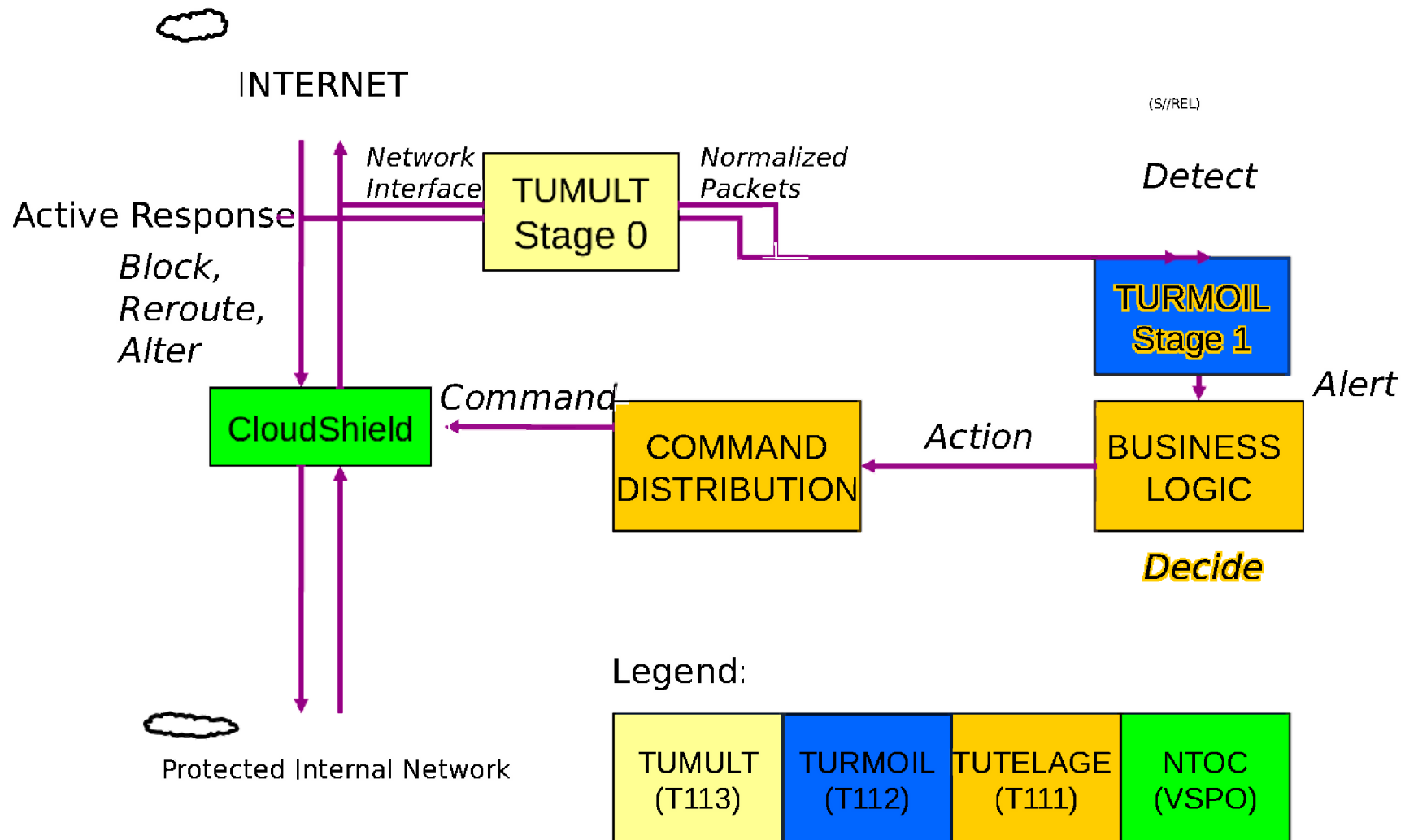
BACKUP SLIDES

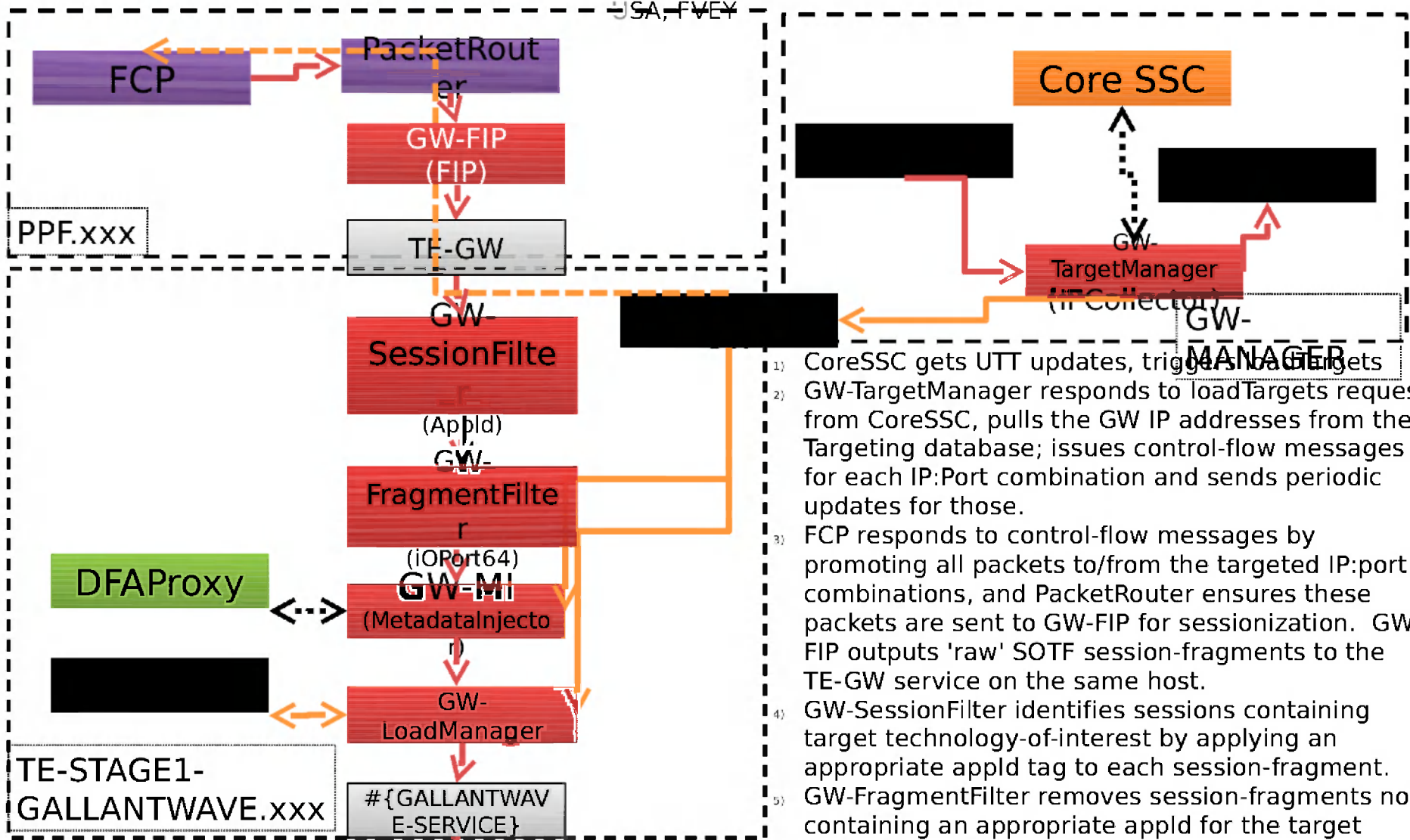
CCA Capabilities Planned for NCC-3 Test Events

Capability	DT/OA 2 (June 2012)		DT/OA 3 (June 2013)	
	Defensive Sensor	SIGINT Sensor	Defensive Sensor	SIGINT Sensor
NETFLOW	Full Netflow	Pretty Good Netflow	Full Netflow	Full Netflow
BLUESNORT (updates)	Yes	No	Yes	Yes
FULL SNORT	Yes	No (Core 4)	Yes	Yes
POPQUIZ	No	No	Yes	Yes
Performance Testing	Yes	No	Yes	Yes
Wireless reinjection	N/A	Yes	N/A	Yes
CA Reinjection	No	Yes	Yes	Yes
Cyber Tasking	Yes	Partial	Yes	Partial
Updated Cloudshield Interface	Partial	N/A	Yes	Yes
Metrics and Monitoring	Yes	No	Yes	Yes

 Orange items are being revisited. Requirements without explicit TML Core 4 dependency need mission documentation to justify not being covered in DT/OA 2.

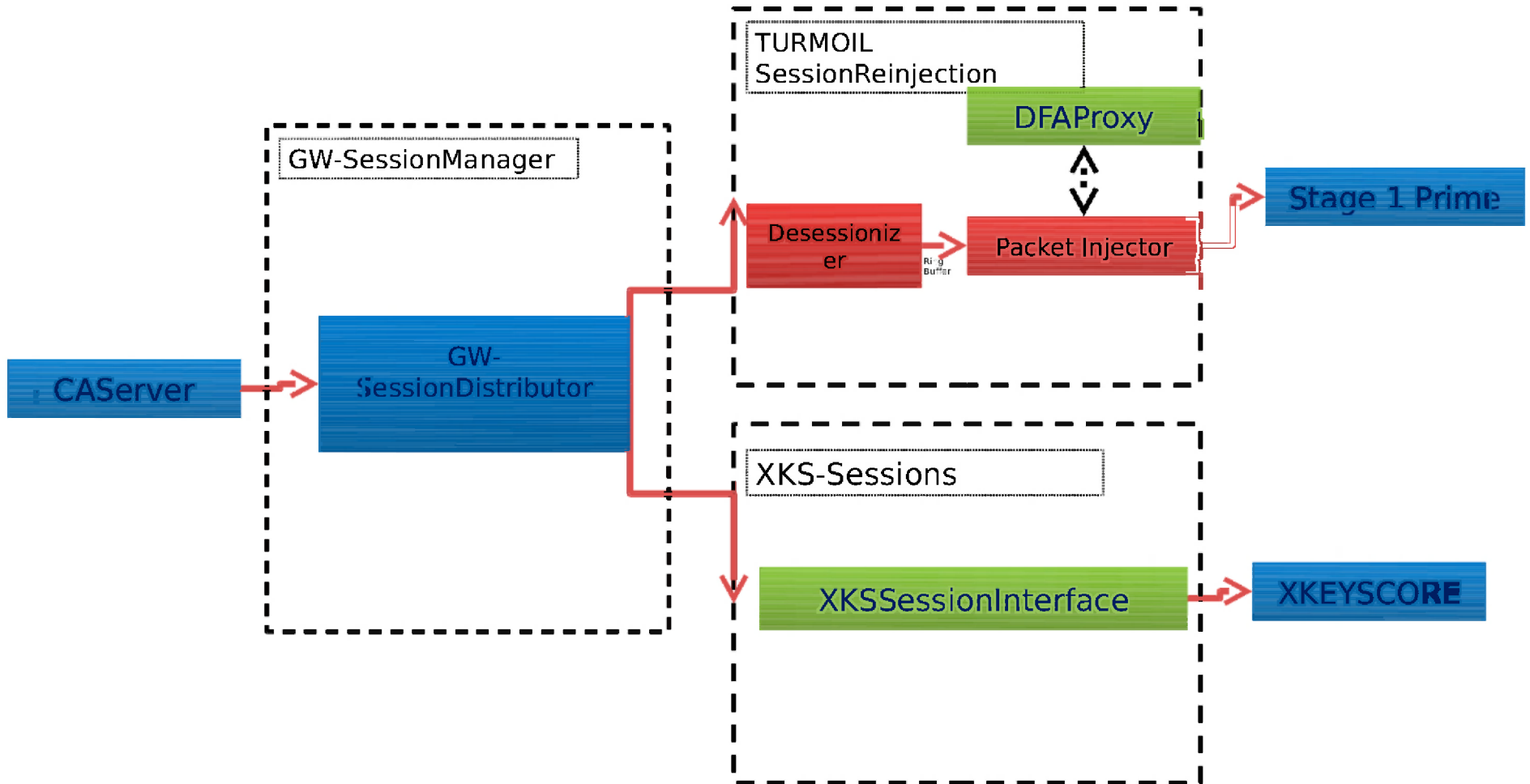
(S//REL) Dynamic Defense Logical Diagram





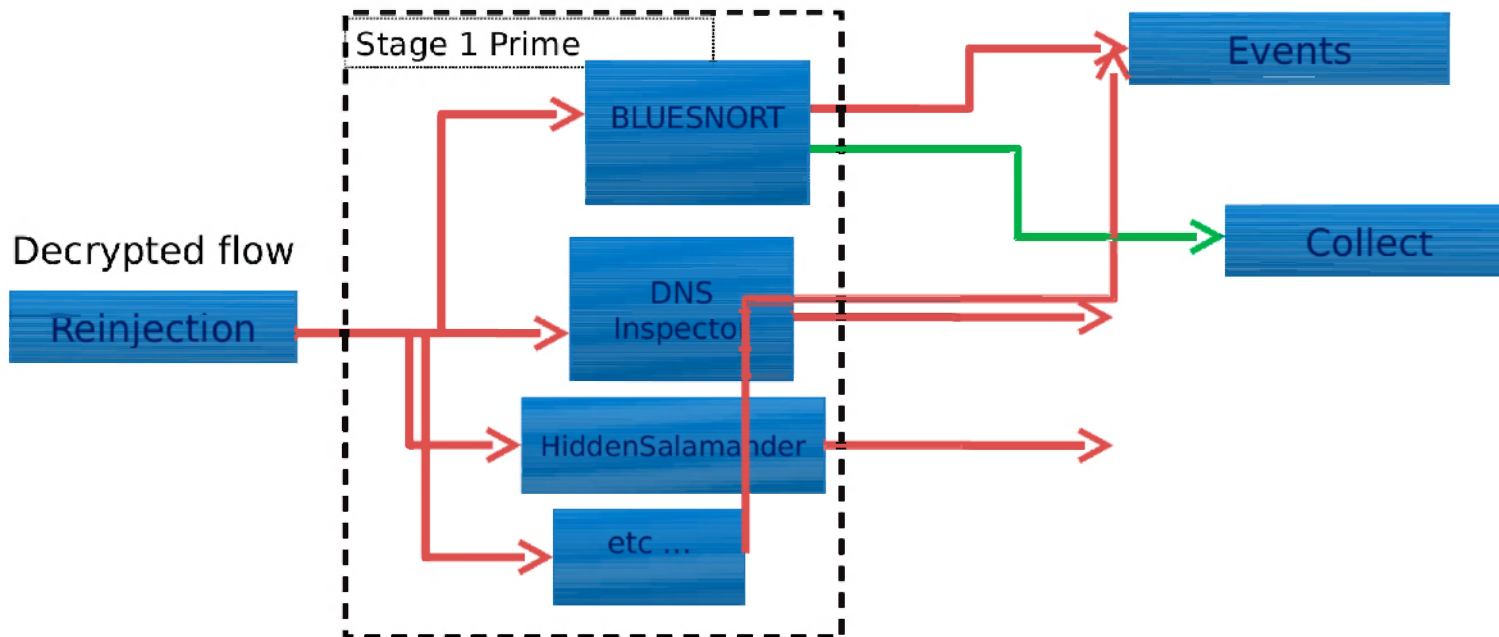
- 1) CoreSSC gets UTT updates, triggers target updates
- 2) GW-TargetManager responds to load targets request from CoreSSC, pulls the GW IP addresses from the Targeting database; issues control-flow messages for each IP:Port combination and sends periodic updates for those.
- 3) FCP responds to control-flow messages by promoting all packets to/from the targeted IP:port combinations, and PacketRouter ensures these packets are sent to GW-FIP for sessionization. GW-FIP outputs 'raw' SOTF session-fragments to the TE-GW service on the same host.
- 4) GW-SessionFilter identifies sessions containing target technology-of-interest by applying an appropriate appld tag to each session-fragment.
- 5) GW-FragmentFilter removes session-fragments not containing an appropriate appld for the target technology-of-interest. Additionally, as a work-around for an issue in FIP 3.1.10, erroneous session-fragments missing a specific metadata filed are removed. GW-MI applies SRI obtained from Dfid Allocator. GW-MI applies SRI obtained from the DFID allocator. GW-LoadManager delivers buffered data into a

Delivery to both XKEYSCORE and Stage 1 Prime Reinjection



TURMOIL

Stage 1 Prime Reinjection



Proposed Tasking Flow for TUTELAGE Cryptanalytic Capability

