

LNIC Brief to TDL Summit

11 Nov 19



Scope

- Brief Overview of LNIC – COL Blaydon Morris
- TMC – Mr Adam Mead
 - Background, acquisition method, development work, future direction
- Fires trial (JEDI) – Mr Adam Mead
- Key issues and industry support options – COL Blaydon Morris



Vision

- The Land Network Integration Centre is regarded within the Australian Defence Force and industry as Defence's Centre of Excellence for Land C4I systems **integration, innovation**, testing, evaluation and network certification in support of Joint Land Combat and Capability Development.
- Principles:
 - Maximise integration – need to share vice need to know
 - Simplify the network – make the complex less complex
 - Survivable in a contested, congested EMS – threat focus

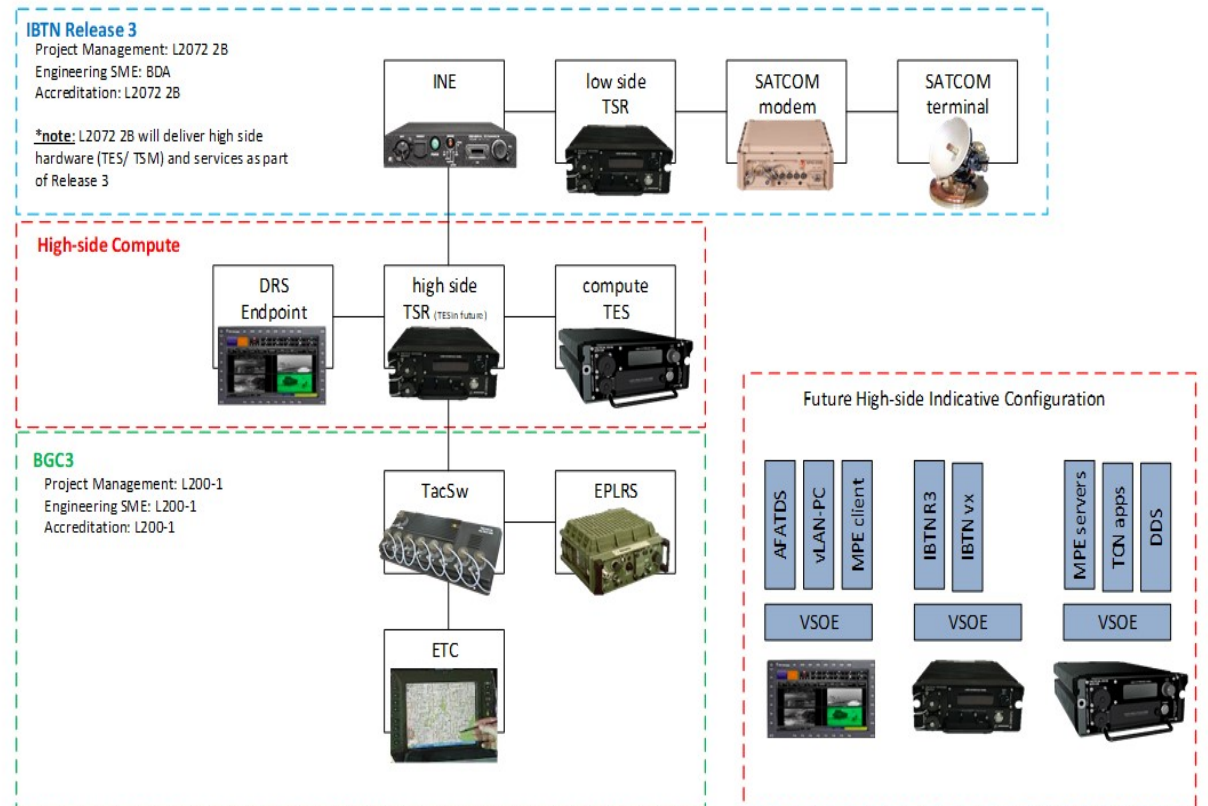
Experiences / Lessons

Continually Review

- Tactical Network and Mission Partner Environment on one vehicle
- TCN, SATCOM – LTE/WIFI



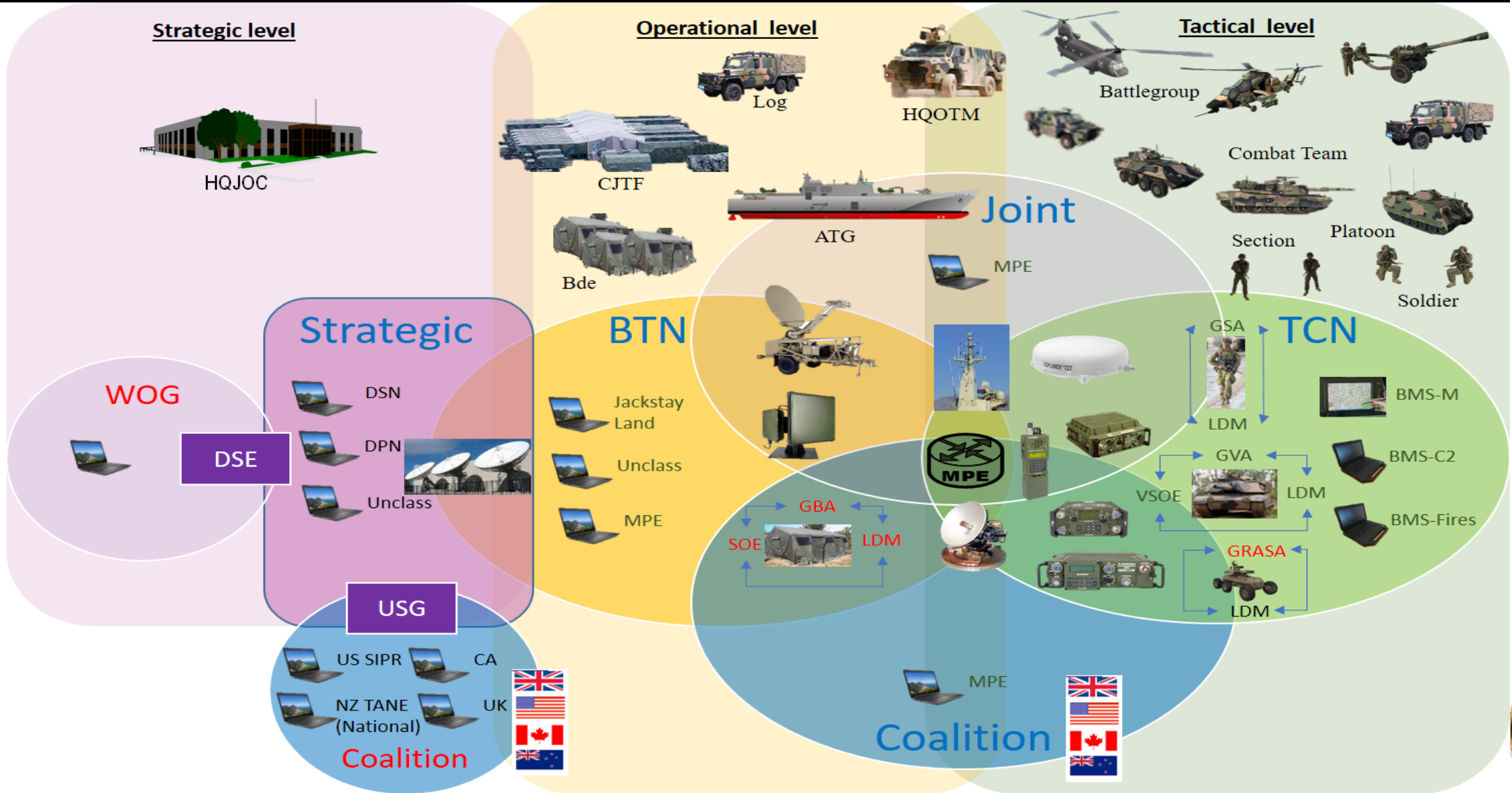
Headquarters on the Move - Exercise TS19





Army

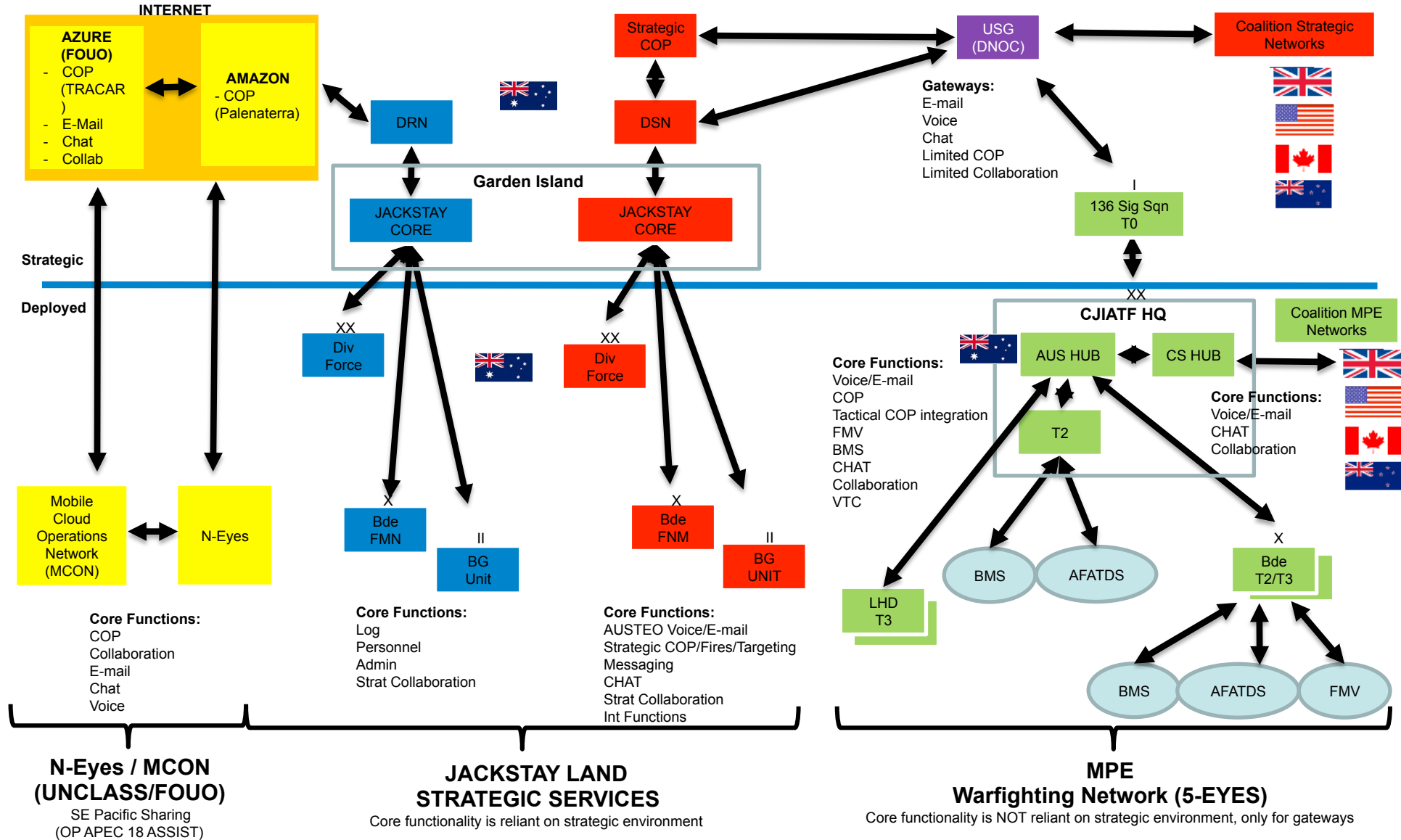
THE NETWORK AT THE CENTRE





Army

JTF DEPLOYED NETWORKS





Army

Army Track Management Capability

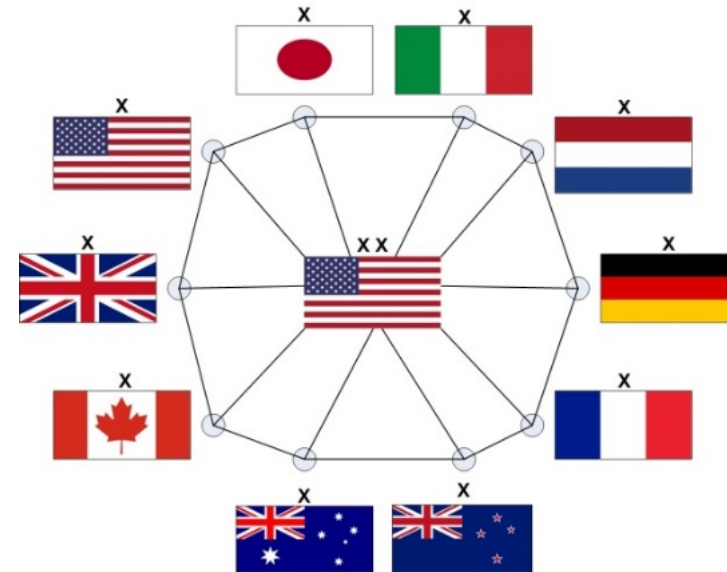
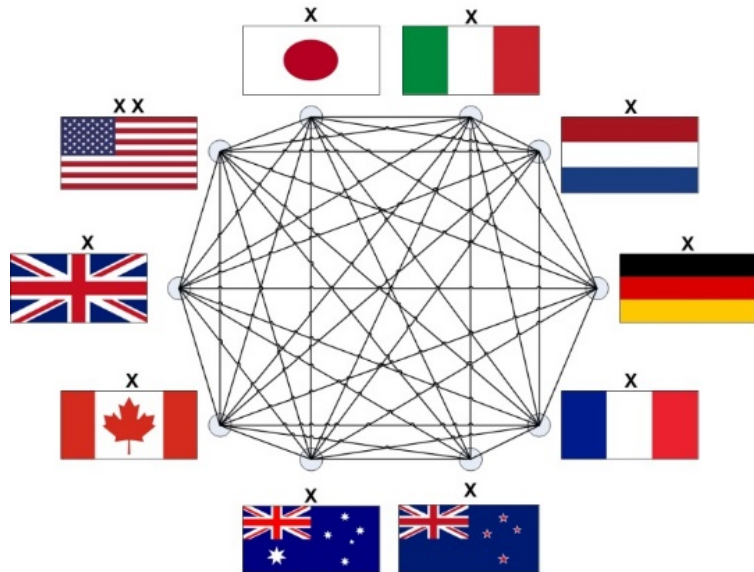


Army Track Management Capability

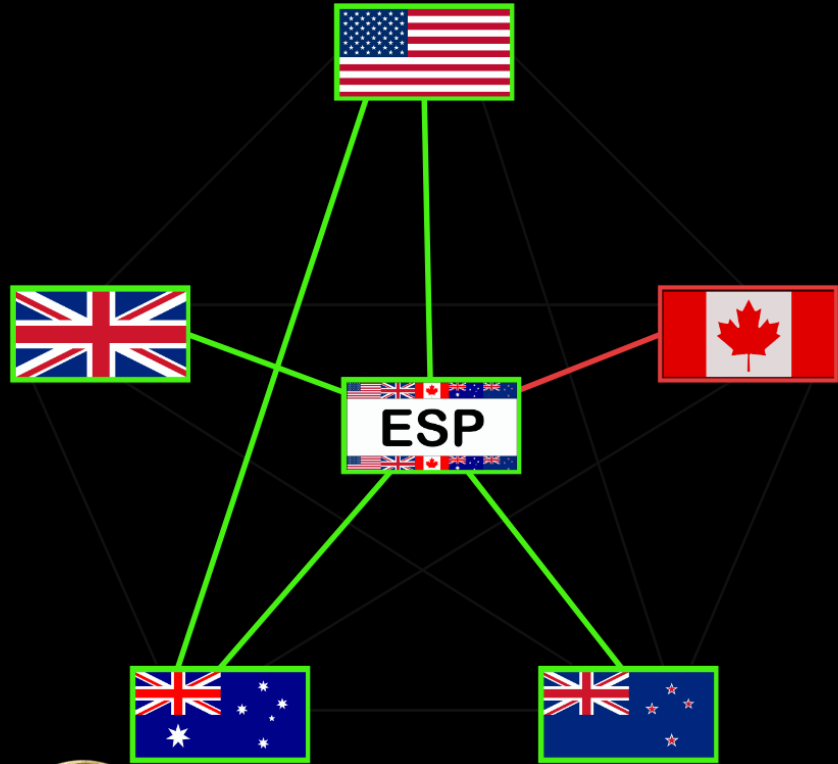
- Essential capability for Army to interface with Joint and Coalition systems
- Multiple protocols, multiple versions, and filtering
- Training remains biggest shortfall
- Background
 - AWA17.1
 - Retirement of legacy TMC
 - Concept Technology Demonstrator (key – Shared risk)
 - JWA19.1 and EXTS19
 - LNIC led procurement with a number of development packages

JWA19.1 COP



- First example of a COP hub spoke model
- COP Technical Assurance Cell (CTAC) established however remains immature
- Aus demonstrated a COP Assurance Tool



COP Assurance Tool



FROM	TO	PROTOCOL	PATH	STATE	DUE
AU	ESP	MIP	SITAWARE --> SITAWARE	OK	-->-->
ESP	AU	MIP	SITAWARE --> SITAWARE	OK	00:03:55
GB	ESP	MIP	SITAWARE --> SITAWARE	OK	00:04:51
NZ	ESP	MIP	SITAWARE --> SITAWARE	OK	00:04:52
AU	ESP	NFFI	SITAWARE --> SITAWARE	OK	00:04:56
ESP	AU	NFFI	SITAWARE --> SITAWARE	OK	00:04:07
ESP	GB	NFFI	SITAWARE --> SITAWARE	OK	00:01:57
ESP	NZ	NFFI	SITAWARE --> SITAWARE	OK	00:01:41
GB	ESP	NFFI	SITAWARE --> SITAWARE	OK	00:00:39
NZ	ESP	NFFI	SITAWARE --> SITAWARE	OK	00:01:53
US	ESP	SHC	SITAWARE --> SITAWARE	OK	00:05:02
ESP	CA	NFFI	SITAWARE --> ODB2	OK	00:04:55
AU	US	JREAP-C	SITAWARE --> ADSI	OK	-->-->
CA	ESP	MIP	ODB3 --> SITAWARE	WARN	00:28:17
CA	ESP	NFFI	ODB2 --> SITAWARE	OK	00:03:52
US	AU	JREAP-C	ADSI --> SITAWARE	OK	-->-->

Fires Trial

Joint Effects Datalink Interface

- Linking the 1 DIV Joint Fires and Effects Coordination Cell with the Multi TDL Network via Link 16.
- Exploring Information Exchanges
 - Friendly Situational Awareness
 - Targeting and Fire Support data
 - Coordination and Control Measures (work in progress)
- TS19 Information Exchanges from the JFECC
 - P-8A Poseidon
 - E-7A Wedgetail
 - AH64-E Apache Helicopters
- RF-LOS is a significant limitation for Ground Nodes



Enabling Information Exchange



- FILTER
 - Not every piece of information in one network is of interest to the other
- TRANSLATE
 - Mapping information exchanges between protocols
 - Needs to be informed by operational scenarios and exchange requirements
- FORWARD
 - A mixture of automatic and manual forwarding
- INTERFACE
 - Specific to the deployment
 - Filter/Forward/Translate layer independent
- VISUALISATION [optional]

Key issues and industry support options

- Joint Fires – Development of enhancing and integrating joint (and coalition) fires effects into the network.
- GxA / VSOE – Adoption of Generic vehicle/soldier architectures and Vehicle Standard Operating Environments
- Innovation opportunities – What are we missing and what opportunities exist

Questions

The road to AUS MPE

ABCA Ex
Aqua Terra
2014

- Concept Technology Demonstrator (CTD) – Exercise only
- Accredited Secret Rel FVEY
- 2 Star Div and below
- Called Mission Secret Network (MSN)
- Army directed task
- Originally based on NATO Federated Mission Network (FMN) standards

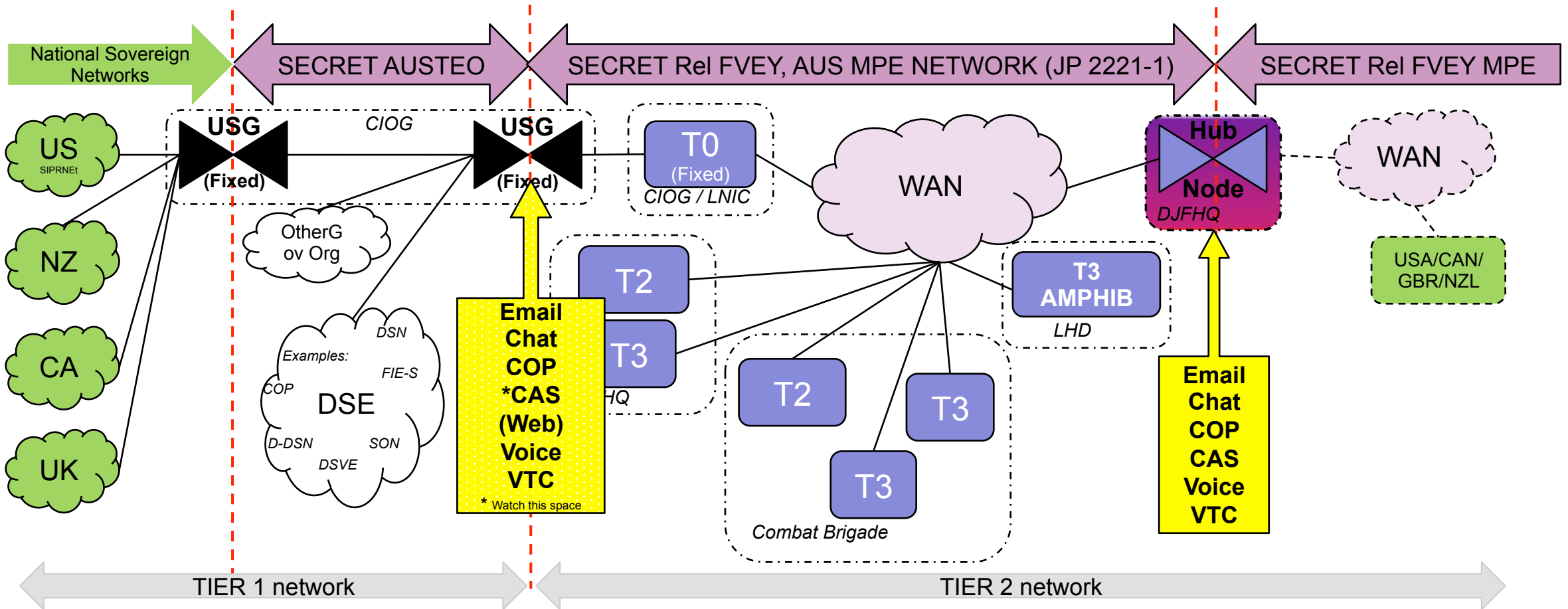
2015 -
2017

- Deployed with success on various exercises including US Army Warfighting Assessment
- Still run as CTD so not formally introduced as a joint capability, but capability proven as a must have
- Evolution to MSN final version 2.8 (Hamel 18)
- Provided a basis for informing ABCANZ standards

2018 -
2020

- Highly formalised design, and prepared for IIS under JP2221 MNIS
- Under JP2221-1 security hardened – logging, intrusion detection, user control, virus, whitelisting applications etc.
- Rebranded as AUS MPE
- Capable of being **deployed** on operations
- All v2.8 MSN equipment to be rebuilt as AUS MPE

High level overview – information exchange



ABCANZ key AUS MPE standards

- Core reference for AUS MPE
 - **2100(R) Edition 4**
 - Coalition Wide Area Network And Network Operations Policy And Planning Standard
 - **2105(R) Edition 4**
 - Network Operations Joining Membership And Exiting Instructions Standard
- ABCANZ CWAN is aligned to US MPE and NATO FMN
- US Army CONOPS for MPE Sep 2019



Army



AUS MPE – Information Exchange Services

- Common Core Services agreed under ABCANZ Standard 2100(R)
 - Voice and video
 - Using SIP. Video supports CUB.
 - Chat
 - Persistent Chat using XMPP. Vital for time sensitive information exchange.
 - E-mail
 - Using Exchange and MTA relays.
 - Collaboration
 - SharePoint – Using templates. Minimise email requirement.
 - COP
 - HQJOC J2 managed. RLP from BMS-C2 and BMS-Fires injected to Joint on coalition HQ's.
 - Radio Over IP (not in current scope per TS17)
- Operational Requirements – provided as a service
 - Intelligence
 - Mapping
 - CND
 - Joint Fires
 - Others by J-cell?

Episodic Mission Network architectures

- ABCANZ standards provide two architectures to connect Network Contributing Mission Partners (NCMP)
- Determined during planning to federate the core services required
- Architectures:
 - **Mesh** model
 - **Hub** and **spoke** model, some times referred 'Internet Service Provider'
 - **Not** mutually exclusive

ISP model - Coalition Services Hub Phase 1 – 2 Deployment

- Connect once
- Mutual trust at hub

