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Agenda

- **Airbase Command Network (AbCOMNET) presentation for Virtual Connex 2020**
 - Daronmont Technologies Overview
 - The AbCOMNET Challenge
 - The AbCOMNET Solution
 - AbCOMNET In the Real World
 - Q & A



Daronmont Technologies

- **History**

- Founded in 1998
- Head Office is in Burwood Victoria
- Engineering Head Quarters in Mawson Lakes South Australia



- Wholly Australian owned Defence Industry Small to Medium Enterprise (SME)
 - Approximately 100 employees



Daronmont Technologies

- **Core Competencies**

- Specialise in design, engineering, integration and support of complex high technology systems
 - Developing Situational Awareness systems
 - Data acquisition and digital signal processing for real-time applications
 - Contract engineering design services
 - ILS capabilities for lifecycle support of in-service equipment and systems

- **Contracted by the Royal Australian Air Force (RAAF) Combat Support Group (CSG)**

- Prime system integrator for the AbCOMNET

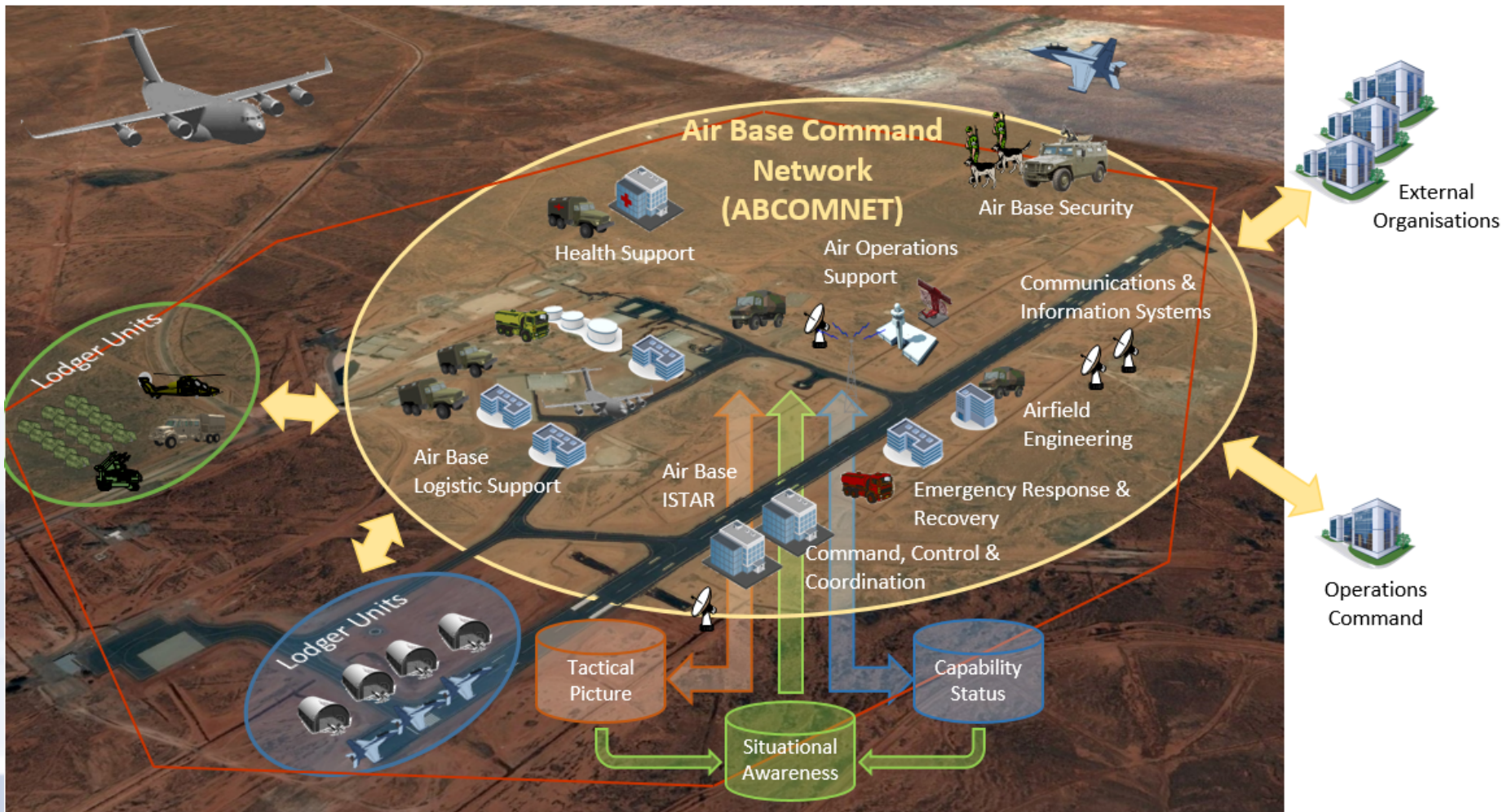


The AbCOMNET Challenge

- **Modernising Airbase Operations**
 - A 5th generation Airforce requires 5th generation airbases
 - Defend against the increasingly complex threats in the Information Age
 - Exploit the tactical advantages provided by the timely sharing and integration of data
- **Secure Integration and Sharing of Data**
 - Generate Situational Awareness to support decision making
 - Combining Tactical Picture & Capability Status data
 - Between the Enabling Functions of an Airbase
 - Across federated 3rd party systems
 - Getting commands and data to where its needed



The AbCOMNET Challenge





The AbCOMNET Challenge

- **Sharing Data Across Boundaries**
 - Across competing 3rd party vendors
 - Across security domains
 - Automate declassification for High to Low transmission
 - With external systems
- **AbCOMNET is a Concept Demonstrator**
 - Establish operational concept and specifications for major program
 - Domestic and expeditionary airbases
 - Develop the RAAF Owned Open Architecture middleware
 - Information Model
 - Support evaluation of systems from 3rd party vendors
 - Determine which systems are the best fit for the RAAF



The AbCOMNET Solution

- **Data Driven Architecture**

- Tactical Picture

- Systems and sensors to report tracks, contacts and events
 - Intelligence Surveillance and Target Acquisition and Recognition (ISTAR) function
 - Performs track correlation and association

- Capability Status

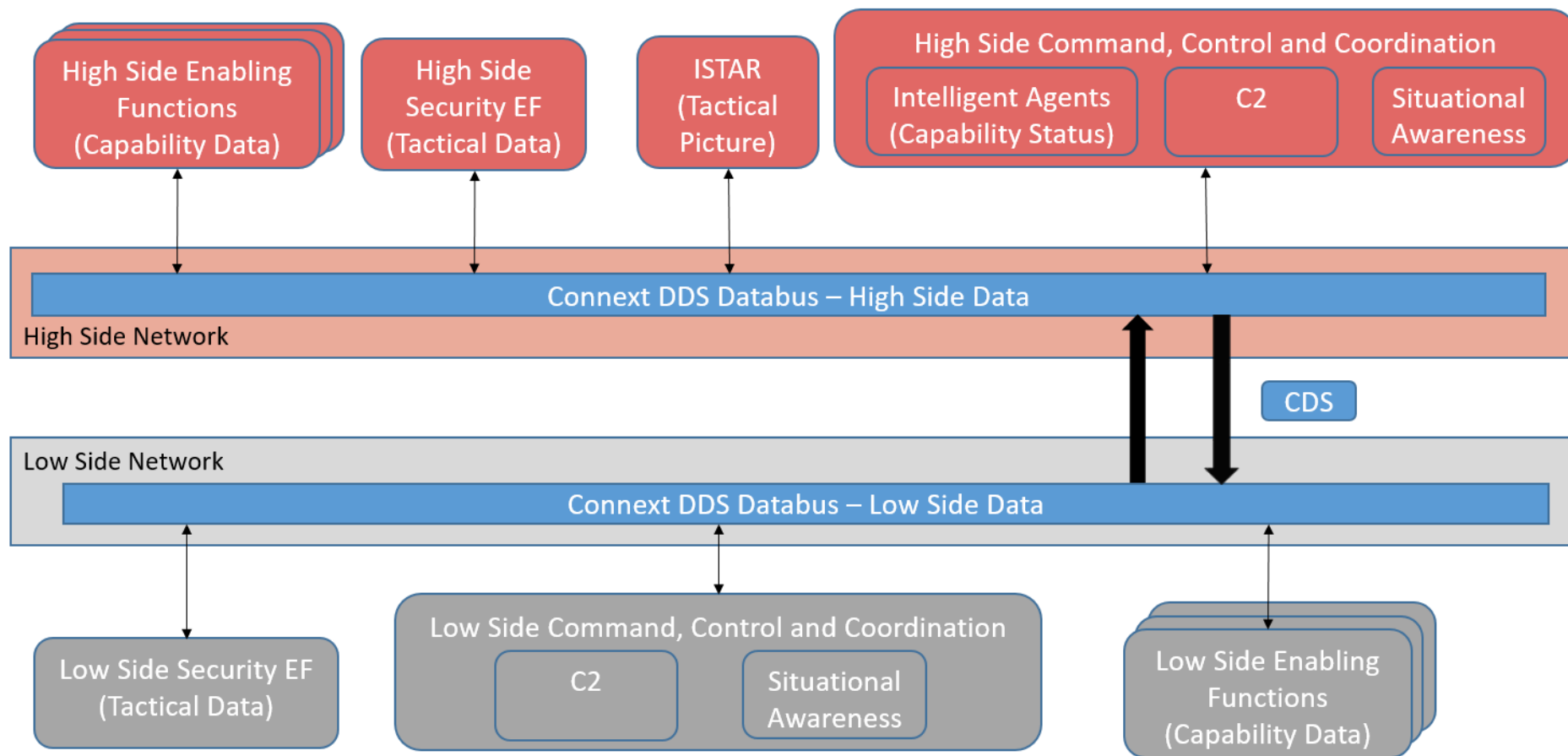
- Reporting raw measurements and operational status of systems and equipment
 - Plug-in intelligent Decision Support Agents
 - Determine if the airbase can achieve its mission

- Command and Control

- Sharing images, video, locations and messages



The AbCOMNET Solution





The AbCOMNET Solution

- **Cross Domain Solution (CDS)**
 - Data is required to cross security domains
 - Operational accreditation of AbCOMNET requires a CDS
 - Rules based data filtering and data redaction
 - Data validation and signing
 - Enforced by Hardware and Software
- **Live Operation**
 - Parallel operation with extant operational Airbase equipment
- **Scenario Evaluation**
 - Requires data replay
 - Can be used for training



The AbCOMNET Solution

- **Why RTI Connex DDS?**
 - Industry standard
 - Data oriented
 - Information Model is described in UML
 - Automated generation of IDL
 - Cross-platform
 - Multi-language support
 - Agile
 - Add and remove 3rd party systems as needed
 - Supports modifying and evolving the Information Model
 - Seamlessly run as a live system or replay an evaluation scenario



The AbCOMNET Solution

- **Why RTI Connex DDS? (cont)**
 - Cross Domain Solution support
 - XML data messages across the CDS
 - Using DDS TypeCode and C# Reflection
 - Independent of Information Model
 - Automated schema generation for CDS validation
 - 3rd party vendor support
 - Adaptors
 - Proprietary interfaces mapped to DDS
 - Windows and Linux platforms
 - C++, Java and C# APIS.
 - Can be developed by OEM or System Integrator
 - Direct to DDS



The AbCOMNET Solution

- **Why RTI Connex DDS? (cont)**
 - RTI Routing Service over AbCOMNET VLANs
 - VLANs provide enhanced security
 - Isolate of 3rd party vendors systems
 - RTI Request Reply provides common services
 - Generation of MIL-STD-2525 symbols for tracks, areas, equipment and contact reports
 - Reduces development, integration, test, verification and validation time
 - Lower costs
 - Better value for our customer



AbCOMNET in the Real World

- Phase 1 – 2017 AVALON Air Show Concept Demonstrator





AbCOMNET in the Real World

- Phase 2 – 2018 RAAF Amberley Air Base Prototype





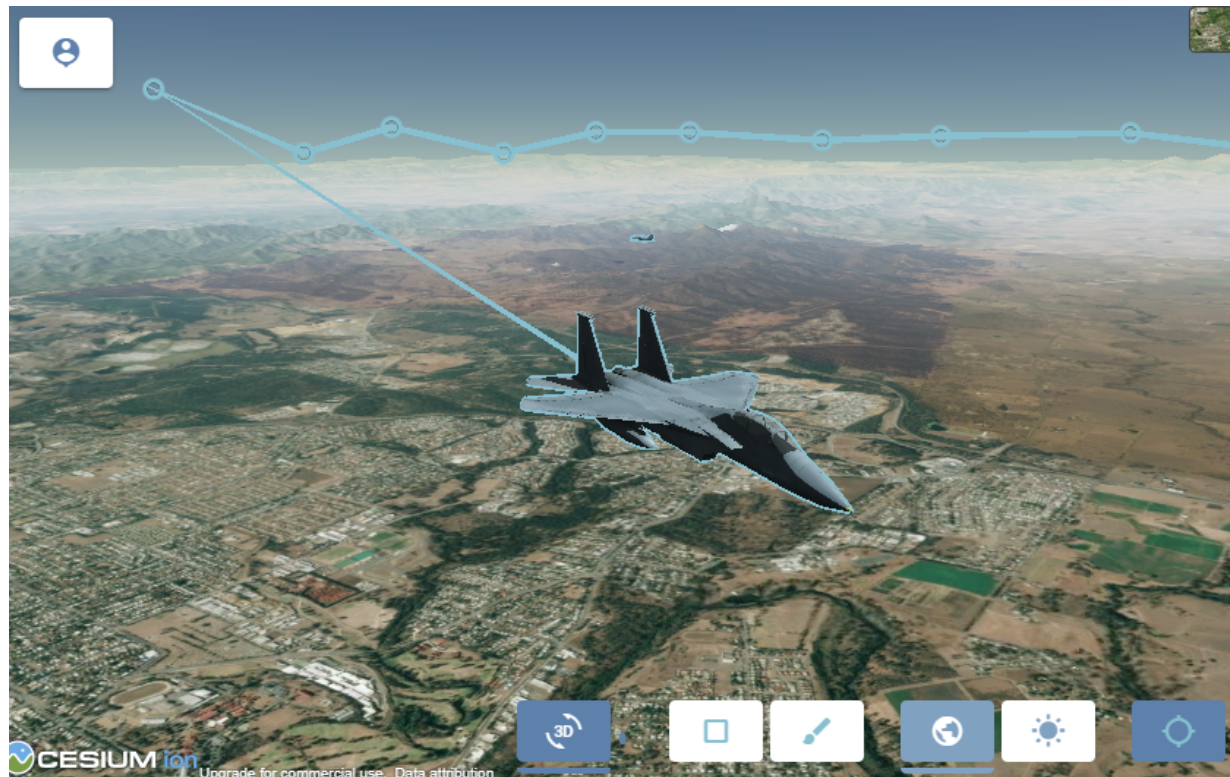
AbCOMNET in the Real World

- **Phase 3 – 2020 RAAF Amberley Air Base Live System**
 - Currently In Progress
 - Focus on implementation of the CDS in preparation for connection into Defence Classified Networks
- **Integrated with Multiple 3rd Party Systems**
 - Saab, Rockwell Collins, Northrop Grumman, Elbit, Motorola, FLIR, MTData and DPRA



AbCOMNET in the Real World

- In House Development
 - Situational Awareness Display



- Mobile device tracking with maps and routes



Any Questions?
Feel Free To Ask.