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“Strengthening and Integrating System Safety Engineering for Australia's future” – OneSKY Australia

ASSC 2018 - May 23-25

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OneSKY
AUSTRALIA
One Team ▸ One System ▸ One Sky

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Presentation Outline

- OneSKY – Overview
- The Problem and
- The Challenges…..

- The Joint Safety Organisation
- Program Challenges and opportunities
- The Program Approach – using best practice methodology
- Integrated Safety Program – V model Customer & Contractor Activities
- Safety Program – Competencies and specialist skills

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What is OneSKY?

- Joint Program between Airservices and Defence
- Thales as prime to develop and sustain Civil and Military Air Traffic Management System (CMATS)
- Replaces the current civilian ATM system and Defence ATM system
- Will manage:
  - 11 per cent of the earth's airspace,
  - some of the world's busiest air routes,
  - national security imperatives.

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What are the benefits of OneSKY?

- Capabilities linked to Benefits
  - System safety and security, More efficient airports
  - Service resilience, Financial and environment savings
  - Greater staff opportunities, Airline decision making

- **Airlines** – reduced fuel, reduced cost and fewer delays and cancellations
- **Travellers** – faster travel times and fewer delays
- **Environment** – fewer CO2 emissions, reduced noise around airports
- **Economy** – productivity and efficiency gains, renewal of critical infrastructure
- **Airforce** – safer operations, increased use of airspace, security

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How does OneSKY work?

- Improve flight coordination - seamless flight information regions
- Optimise traffic flow - prediction and automated long range planning
- More flexible utilisation of airspace - dynamic sectorisation, automated conflict detection
- Improved arrivals and departures
- Controllers
  - Less radar vectoring, less separation management
  - More automation of conflict detections
  - More flow and trajectory management
  - Better allocation of controller resource across airspace
- Pilots
  - More situational awareness, pathway to greater self separation
  - More efficient routes, fewer delays, greater capacity

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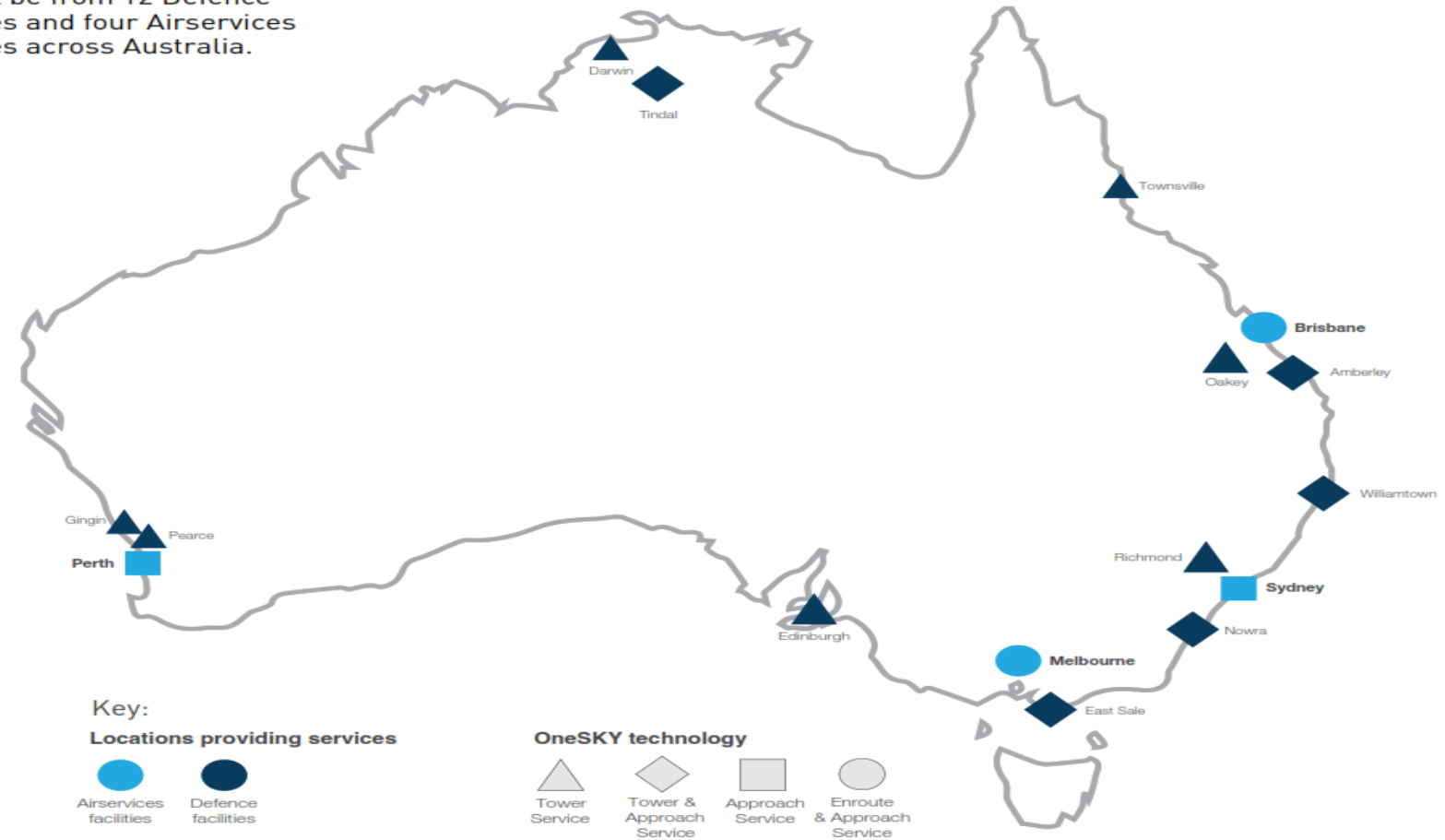
What does OneSKY look like?

Provision of air traffic management services to military and civil aircraft using OneSKY technology will be from 12 Defence sites and four Airservices sites across Australia.



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System Safety and OneSKY

Challenges of integrating safety programs

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System Safety Program Integration
First Impressions…..

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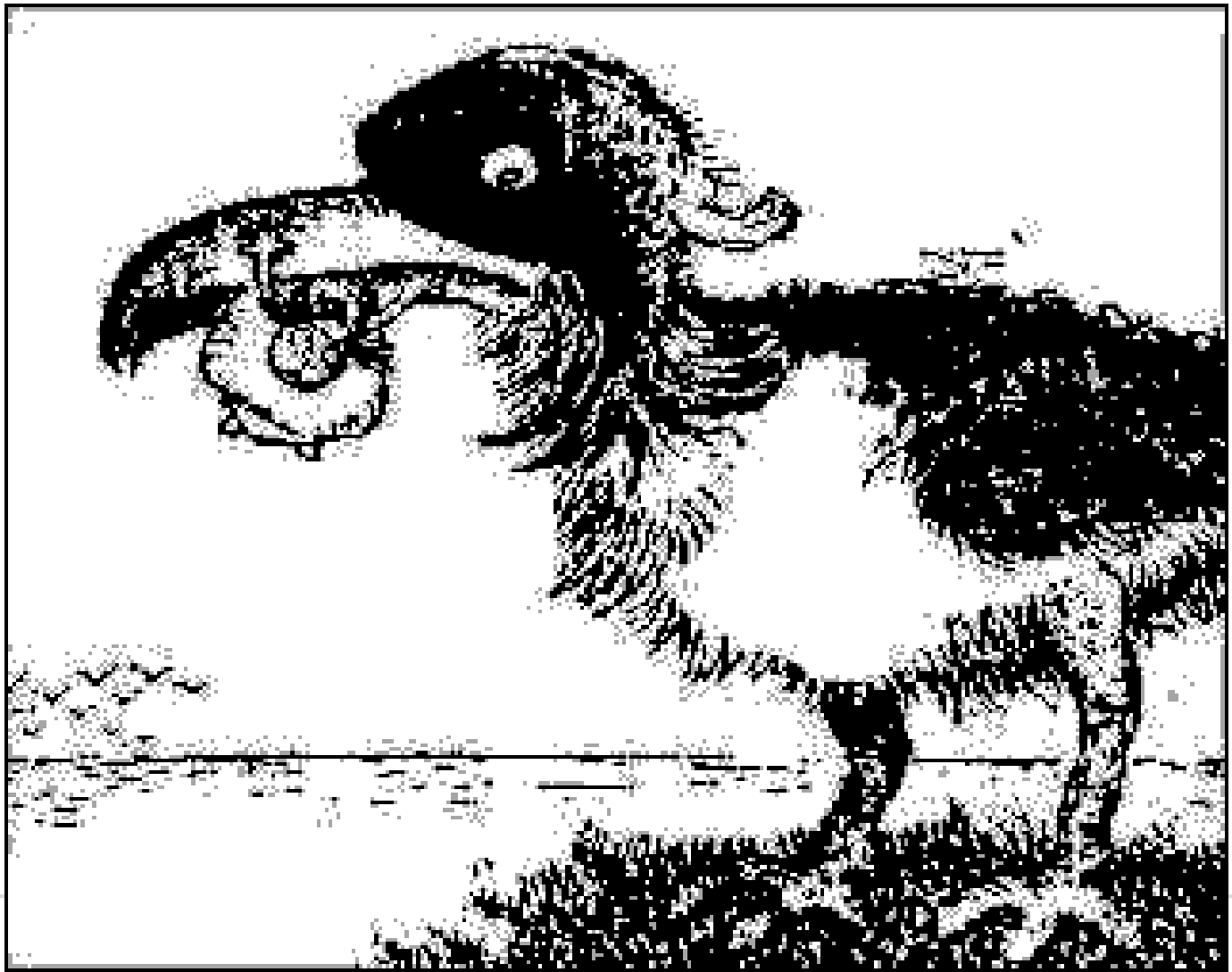
What the customer saw?



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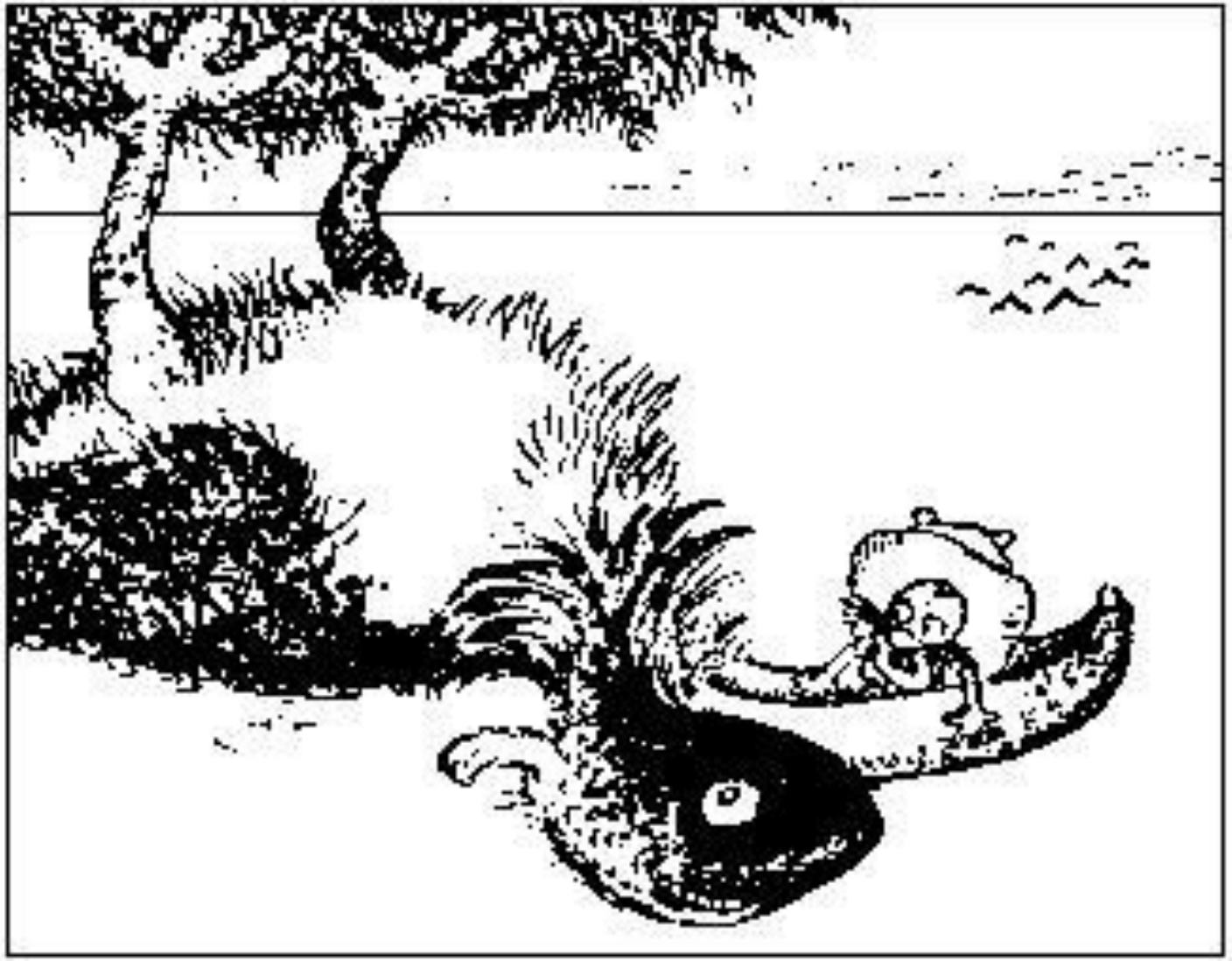
What the contractor saw?



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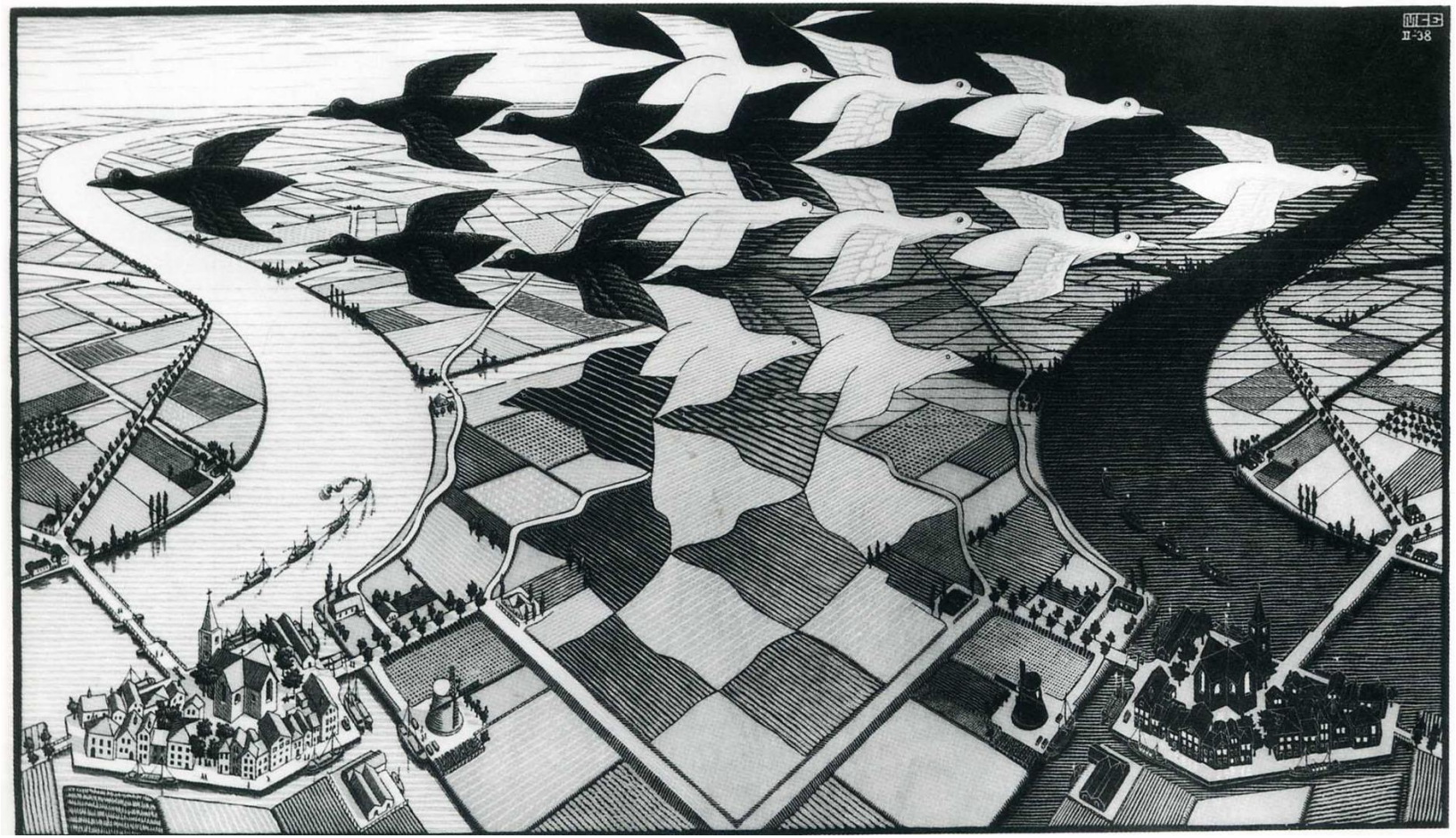
What parts are yours and mine?



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The Challenges

- Hierarchy of SSPs different
- SoS properties abstract from System properties
- Service Provision / SoS Safety Case may not exist

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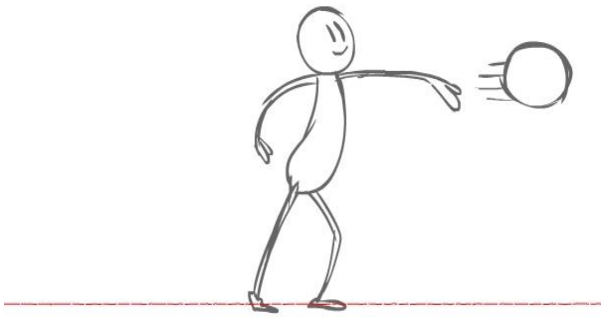
Identifying the boundaries



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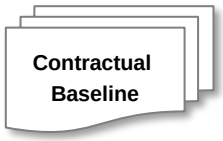
Updated Statement of Work

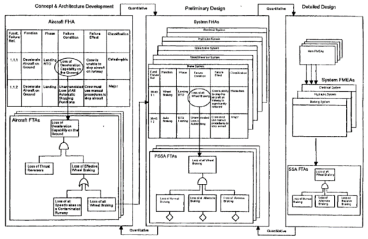
1

Set contractual Baseline In JFPS – statement of Work updated to include safety approach



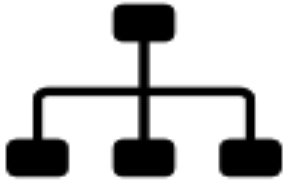
2

Used FHA/FTA (SOS and CMATS) to update JFPS



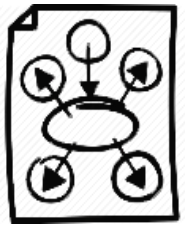
3

Contractor Assess the Impact of updated JFPS – FHA consolidation



4

Contractor provides safety recommendations for ATM SOS and CMATS



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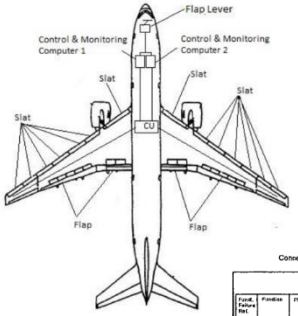
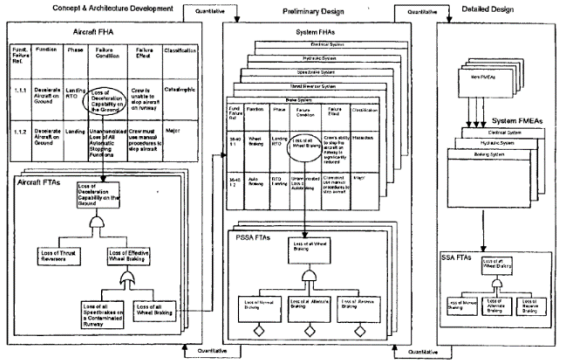
Choosing the right methodology





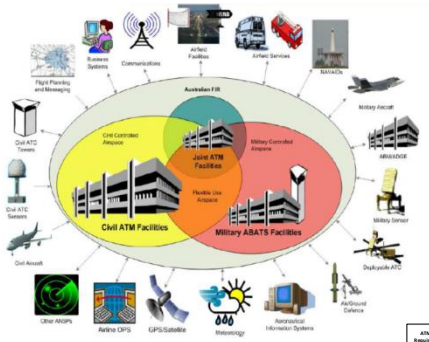
***Airborne**:*

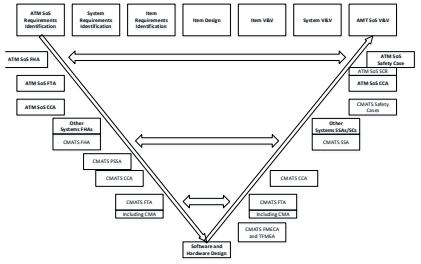
Aircraft FHA, Aircraft FTAs

System FHAs

PSSA FTAs

SSA FTAs





***ATM**:*

ATM SOS FHA and FTAs

CMATS FHA

PSSA FTAs

SSA FTAs

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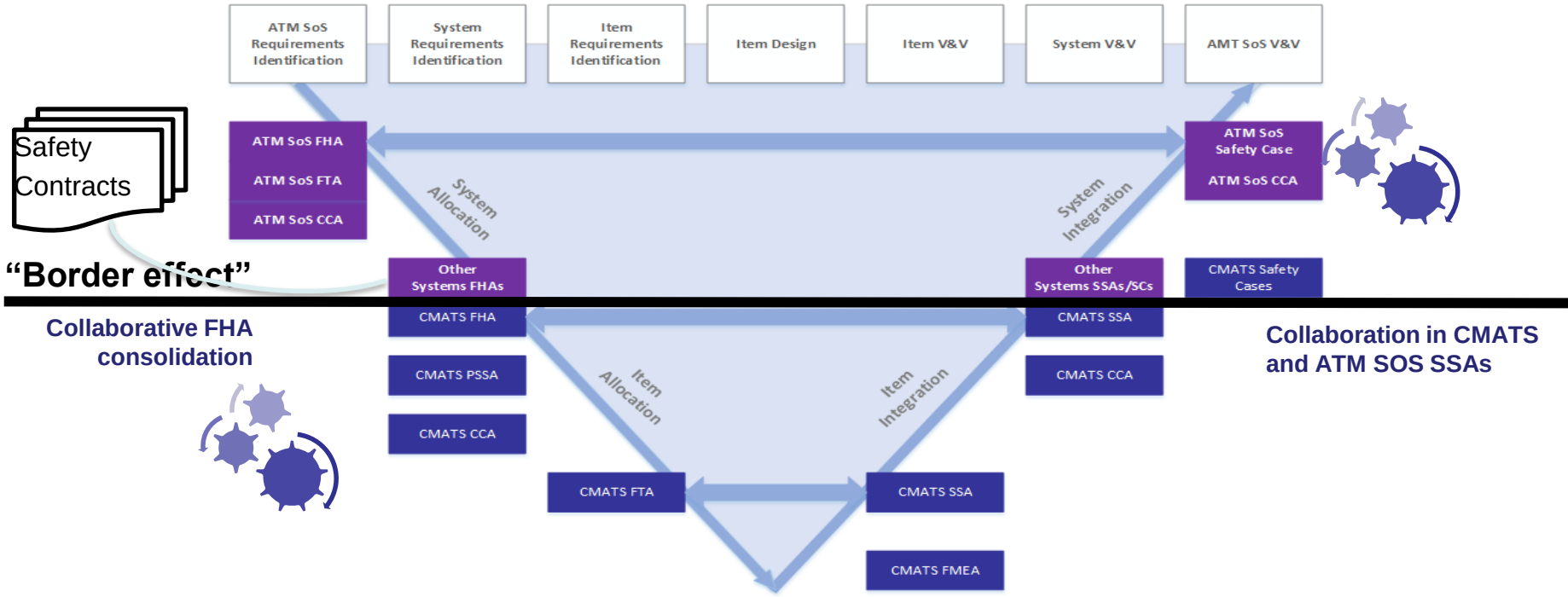
Customer and contractor collaboration



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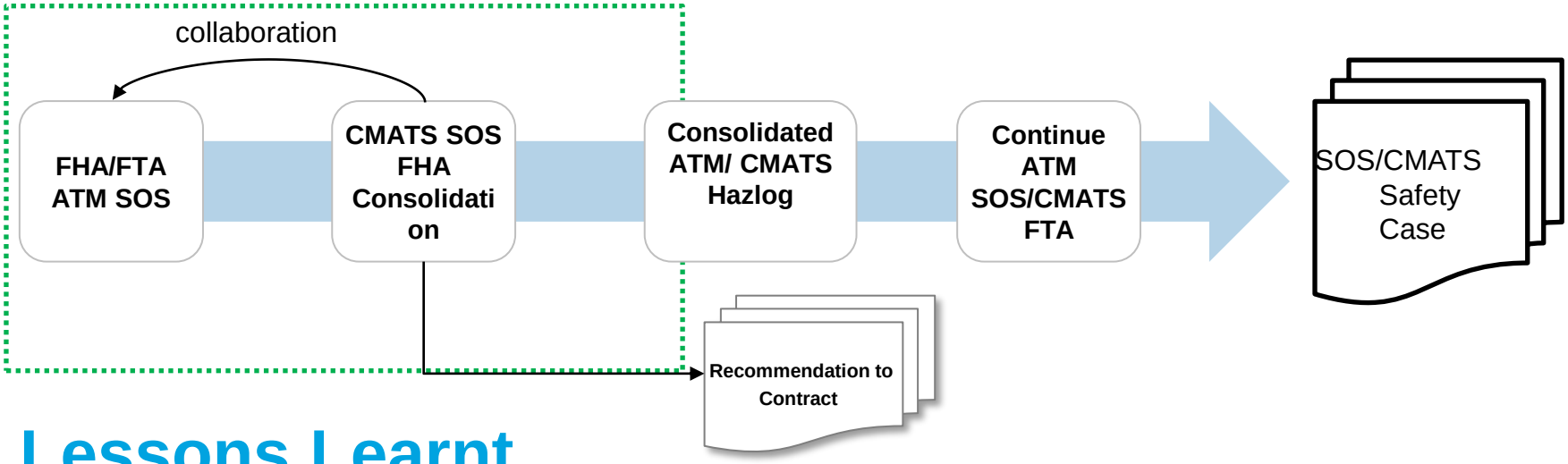
Pulse Check



Lessons Learnt

- Collaboration – between customer and contractor
- Importance of outlining and following methodology
- Looking broader at lessons from different domains such as aircraft
- Identify the right skills for the right phase

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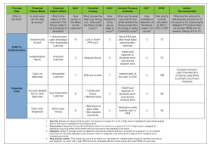
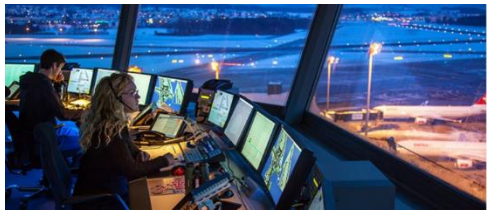
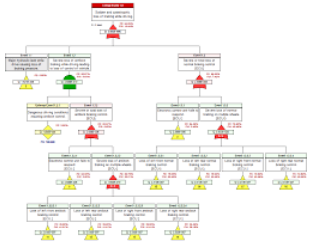
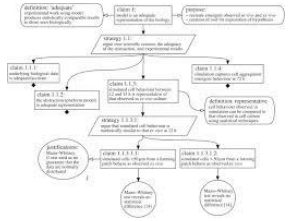
Using specialist skills and competencies









Initial phase

Design phase

Implementation phase

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Summary and Conclusion

From this…

To this…..

- Successful SRR, Contract signature, Roadmap to SDR and beyond
- Collaboration between the ANSP and Supplier
- Harnessing the benefits of the standards to aid collaboration and communication

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