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# The Joint Intelligence Model (J2M)

Quantitative and qualitative insights for the intelligence enterprise

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# Aims

- C4ISR Analysis Group
- The Intelligence Cycle
- The Joint Intelligence Model
  - Overview
  - Components
  - Technical Features
  - Outputs and Analysis
  - Typical Uses
  - Future

# C4ISR Analysis Group

*Leading delivery of expert, timely and exploitable C4ISR Operational Analysis and Decision Support for Defence and Security*



## Customers



The group's skillset includes Programme Leadership, Technical Consulting, Technical Partnering, Technical Leadership, Project Management as well as Analysis. These are key capabilities as Dstl develops its vision to be the first port of call for S&T.



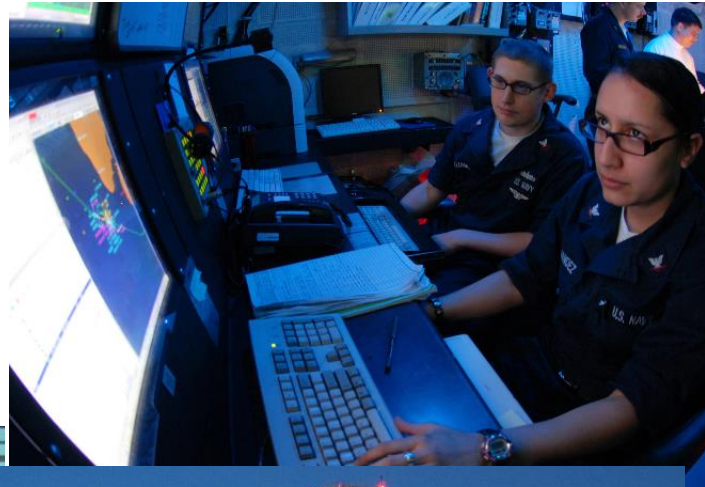
## Analytical Capabilities include:

- Simulation modelling
- Subjective methods
- Mathematical optimisation techniques
- Field trials & experimentation

# J2M Overview

- The Joint Intelligence Model (J2M) is a high-level simulation model of the ISTAR process
  - It represents the key elements of the Intelligence Cycle
    - DCPD – Direction, Collection, Processing & Dissemination
- J2M aims to assess the effectiveness of alternative ISTAR system mixes and architectures to support decision-making
- Designed and developed in C#.Net & Windows Presentation Foundation (WPF) by Dstl
  - The latest release is a major redevelopment, building on six years of growth

# Direct

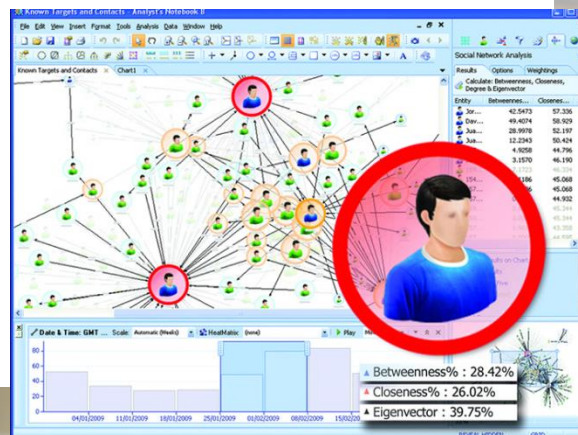


# Collect



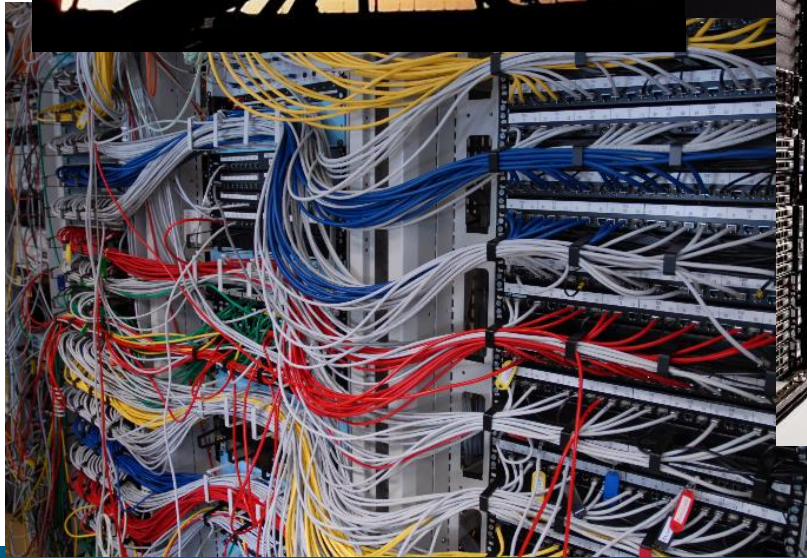


# Process





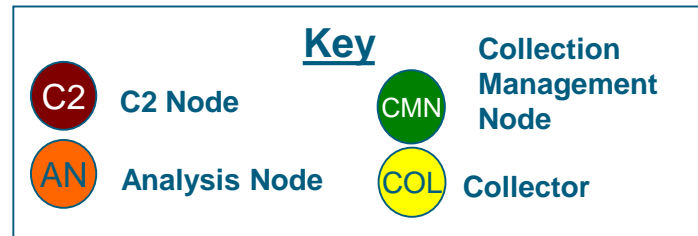
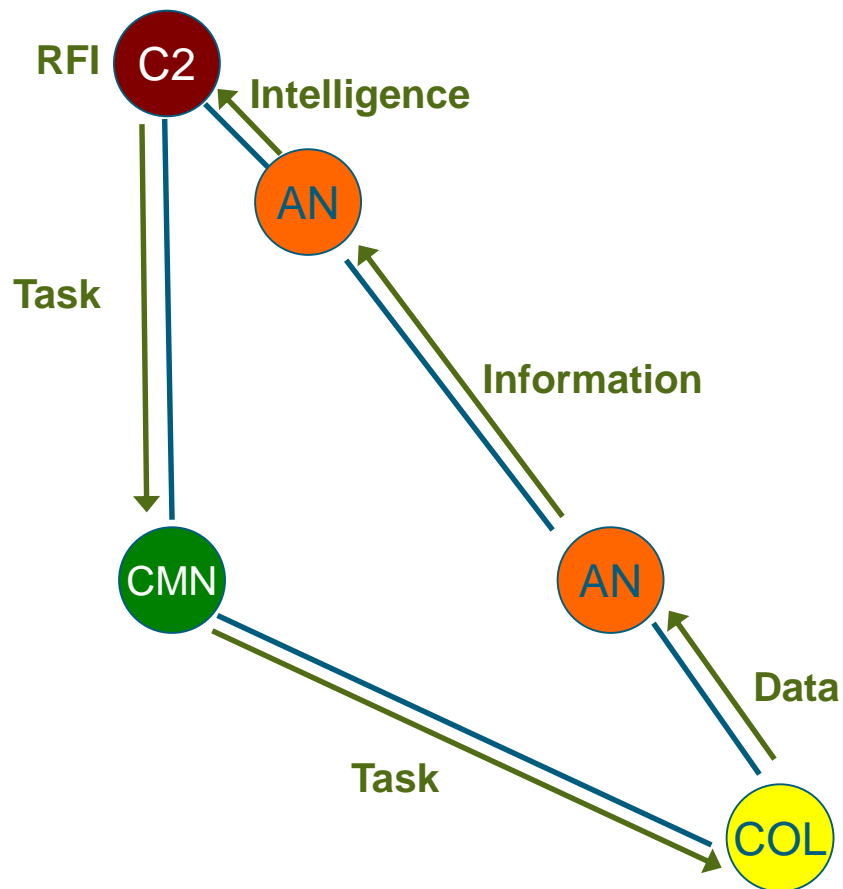
# Disseminate



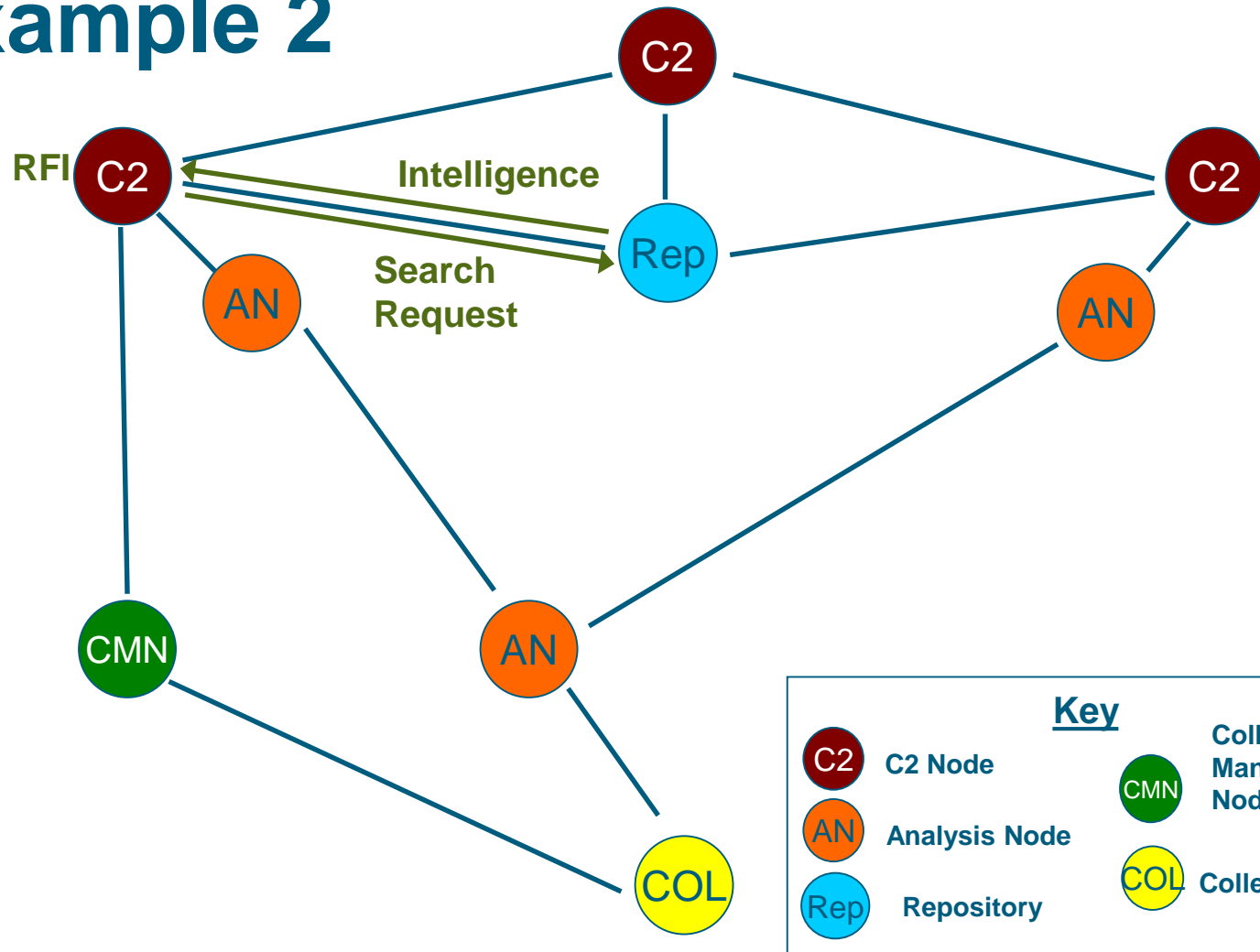
# J2M Entities

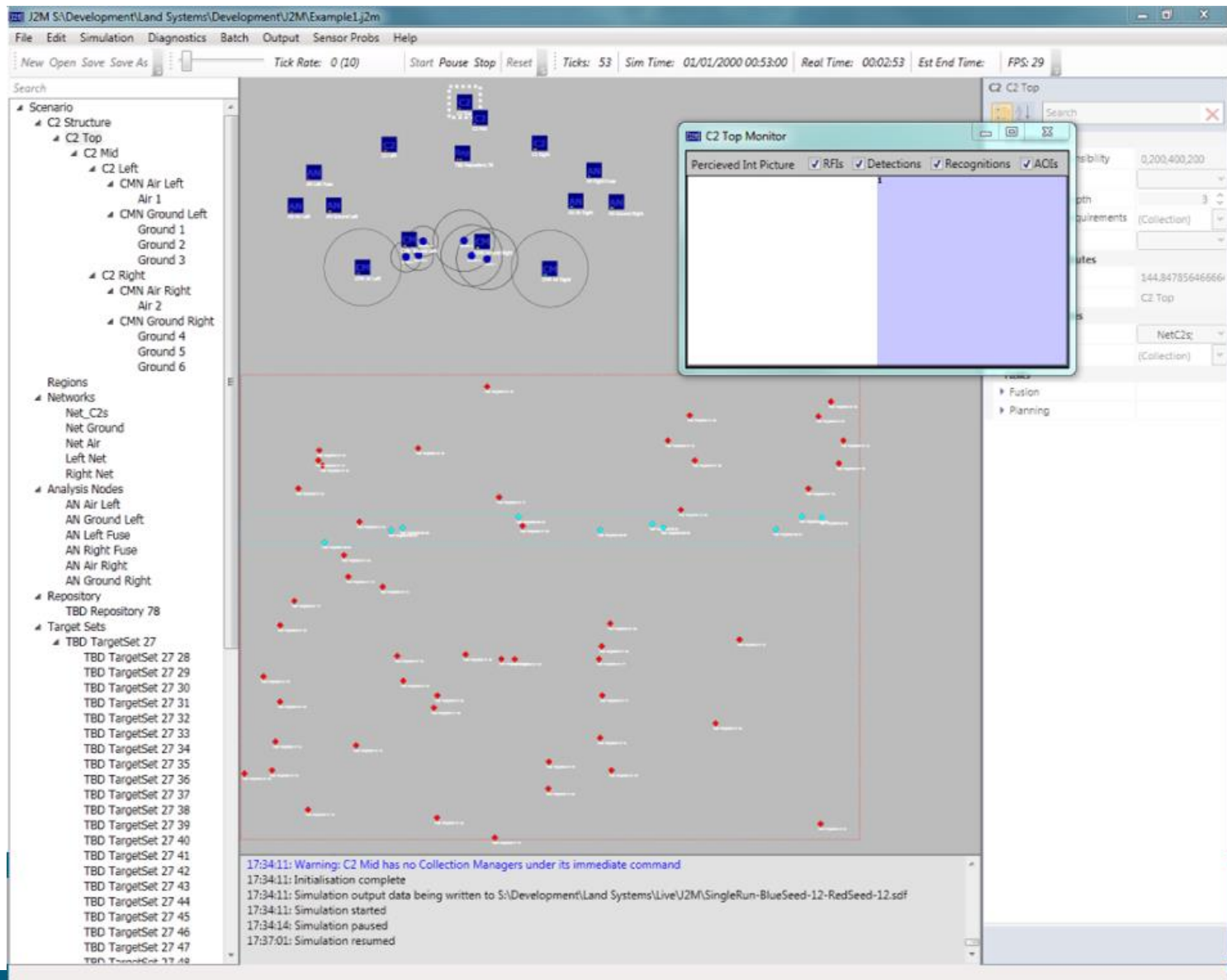
- **C2 Nodes (DCPD)**
  - Those processes within a C2 Node (e.g. HQ) associated with acquiring and managing intelligence - including Intelligence Requirements Management (IRM) and tasking. Has associated Intelligence repository
- **Collection Management Node (DCPD)**
  - Responsible for management of Collection Assets
- **Collection Asset (DCPD)**
  - An asset that searches and monitors specified regions of a scenario and returns data on these activities
- **Analysis Nodes (DCPD)**
  - Represents the exploitation and intelligence production processes i.e. within J2/N2/G2/A2 Cells or Ground Stations.
- **Communication Networks (DCPD)**
  - Allows messages to be passed between entities (includes capacity constraints)
- **Repository (DCPD)**
  - Provides the ability to represent an ISTAR Virtual Knowledge Base (VKB) or Single Intelligence Environment (SIE)

# Example 1



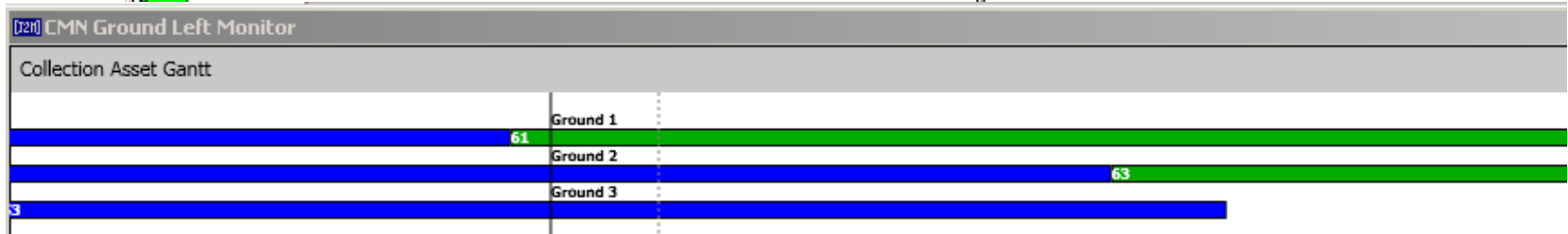
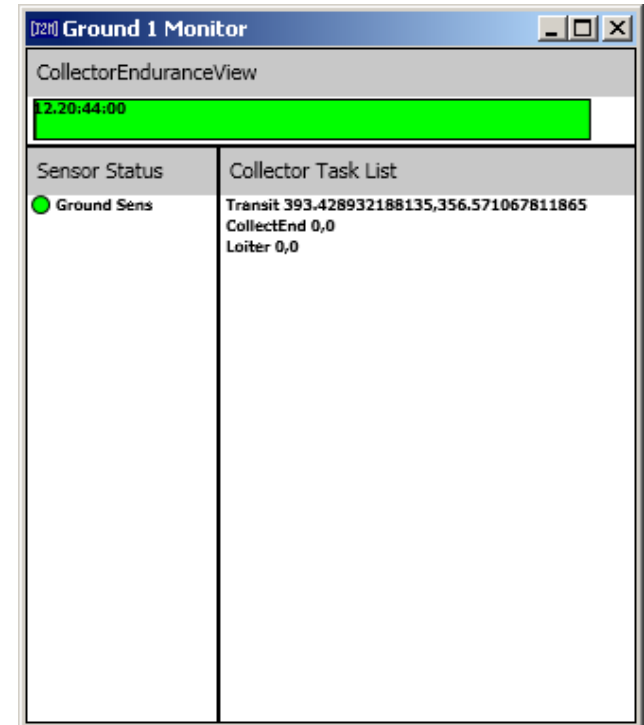
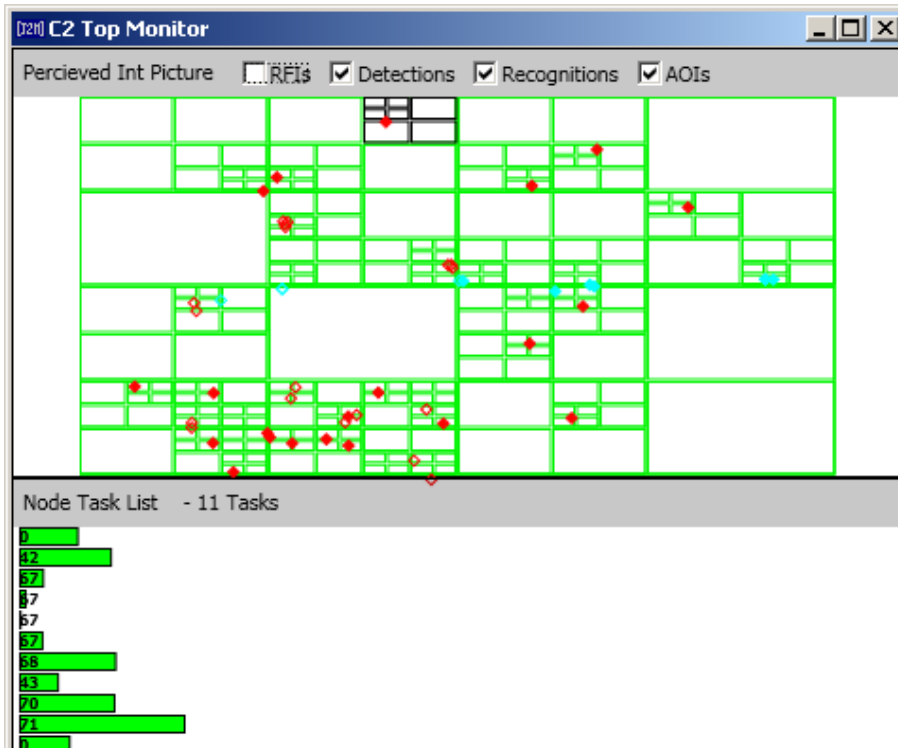
# Example 2



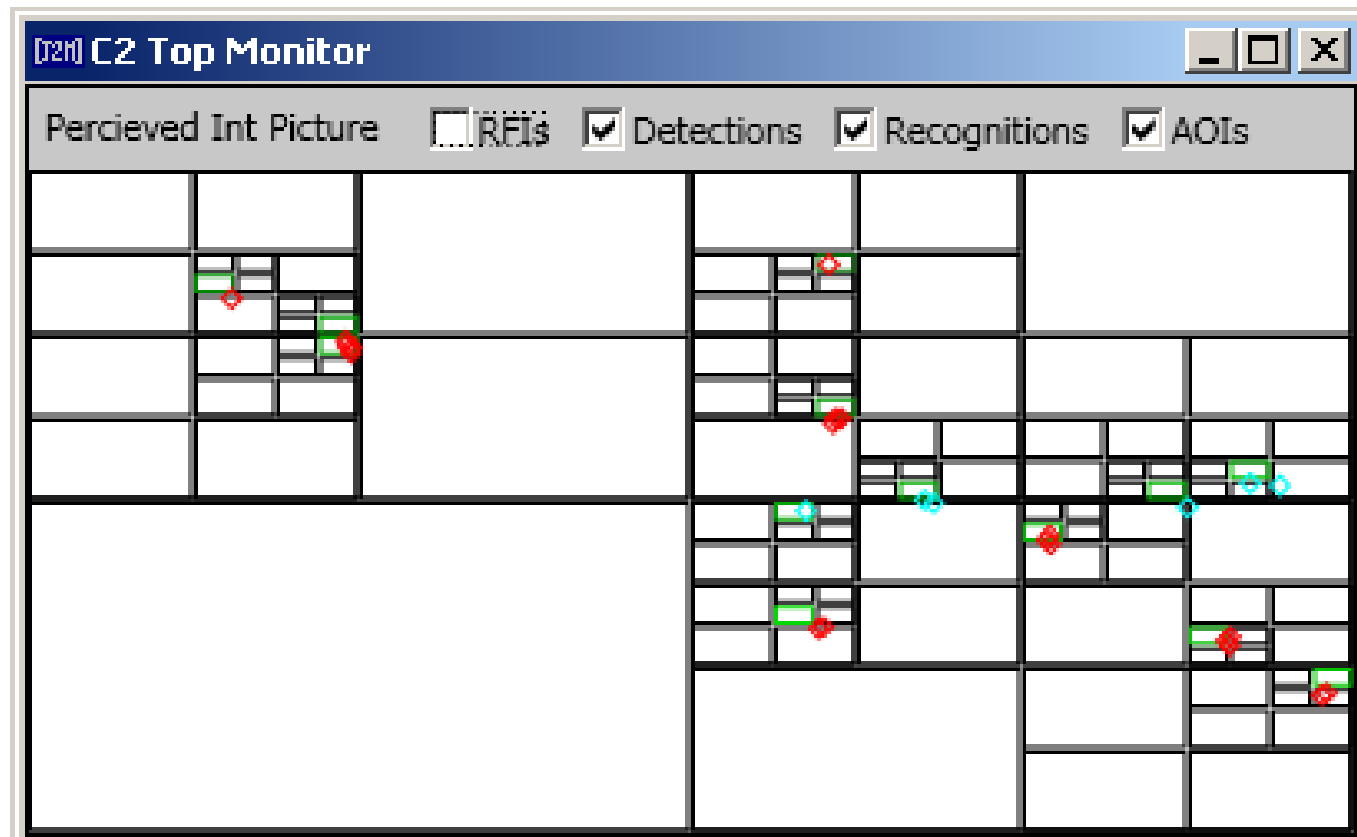




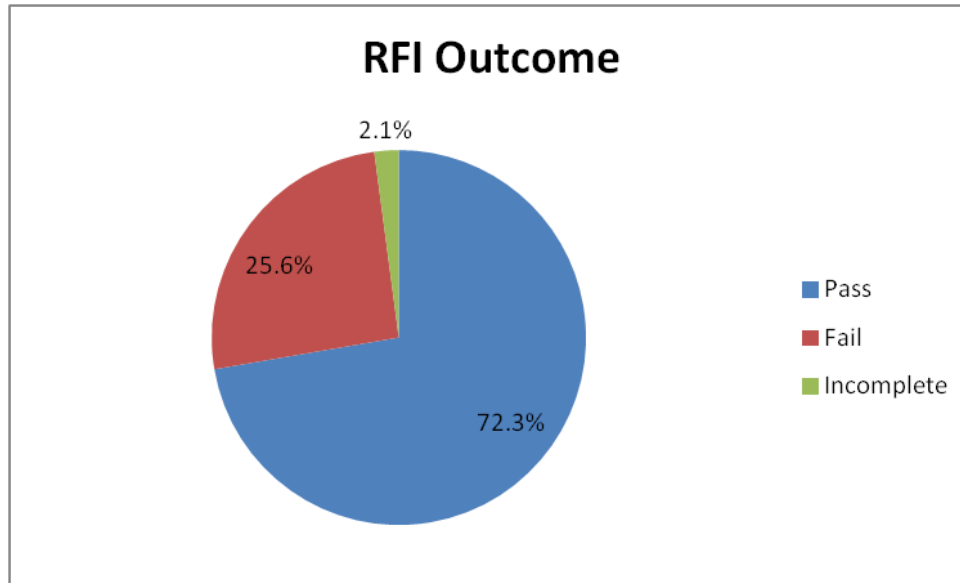
# Monitor Windows



# Quadtrees



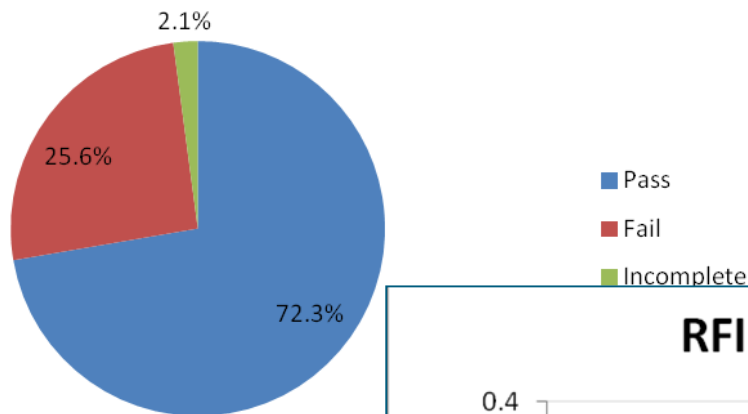
# Outputs



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figures  
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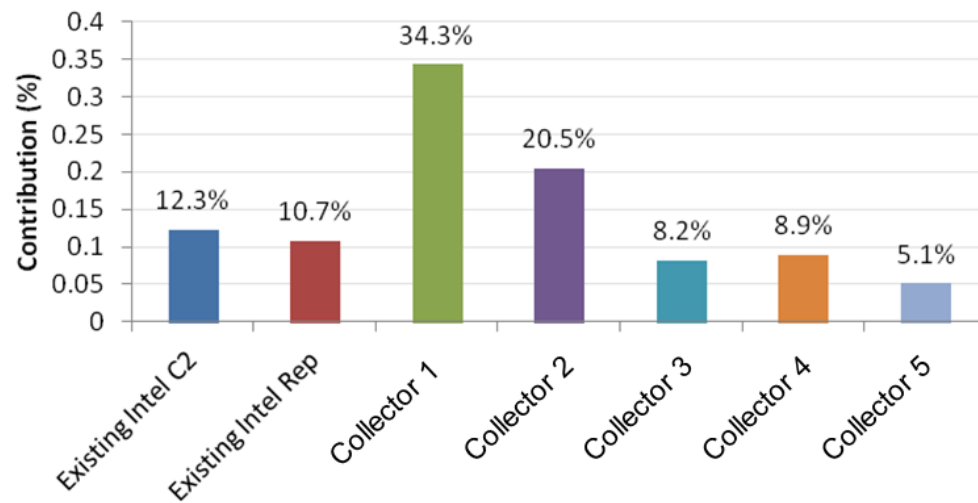
# Outputs

RFI Outcome

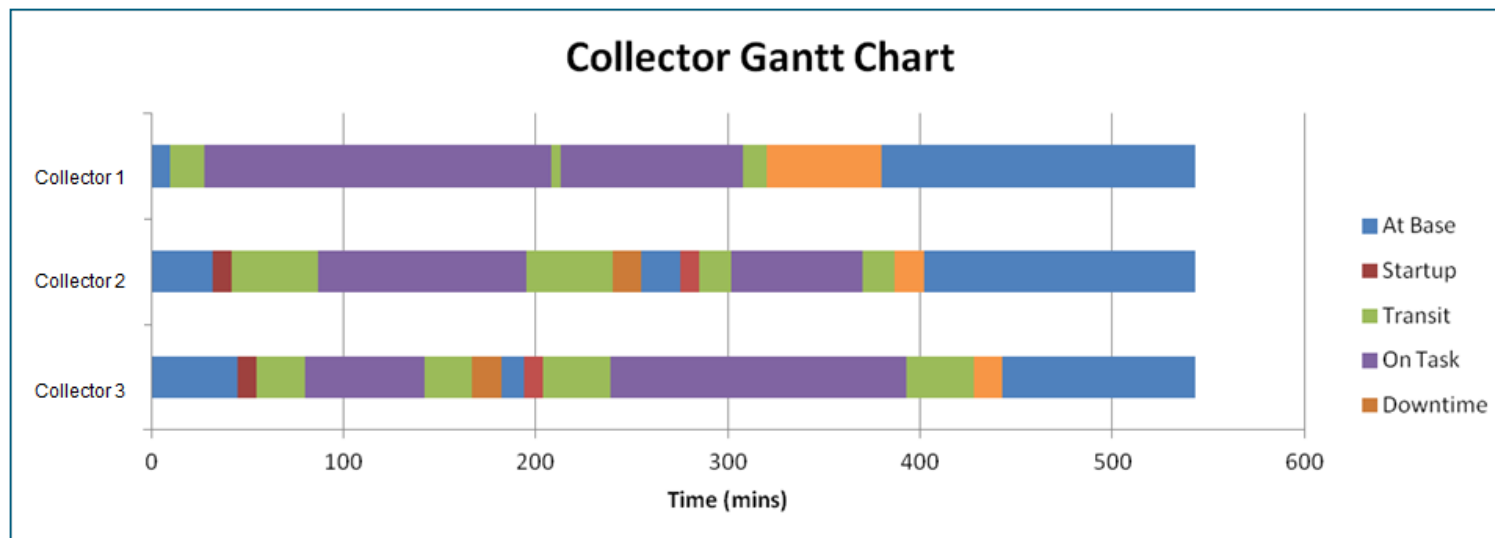


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RFI Pass Contribution



# Outputs

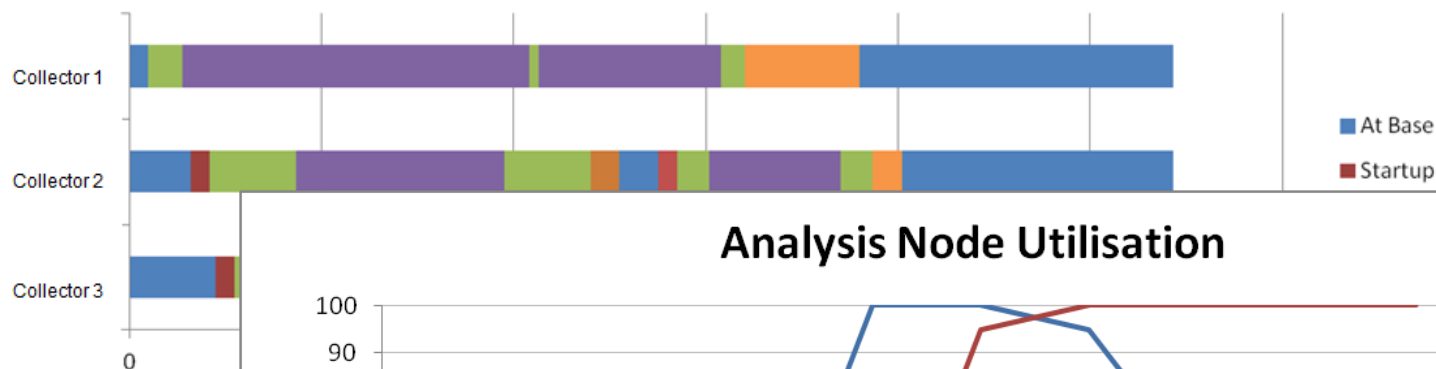


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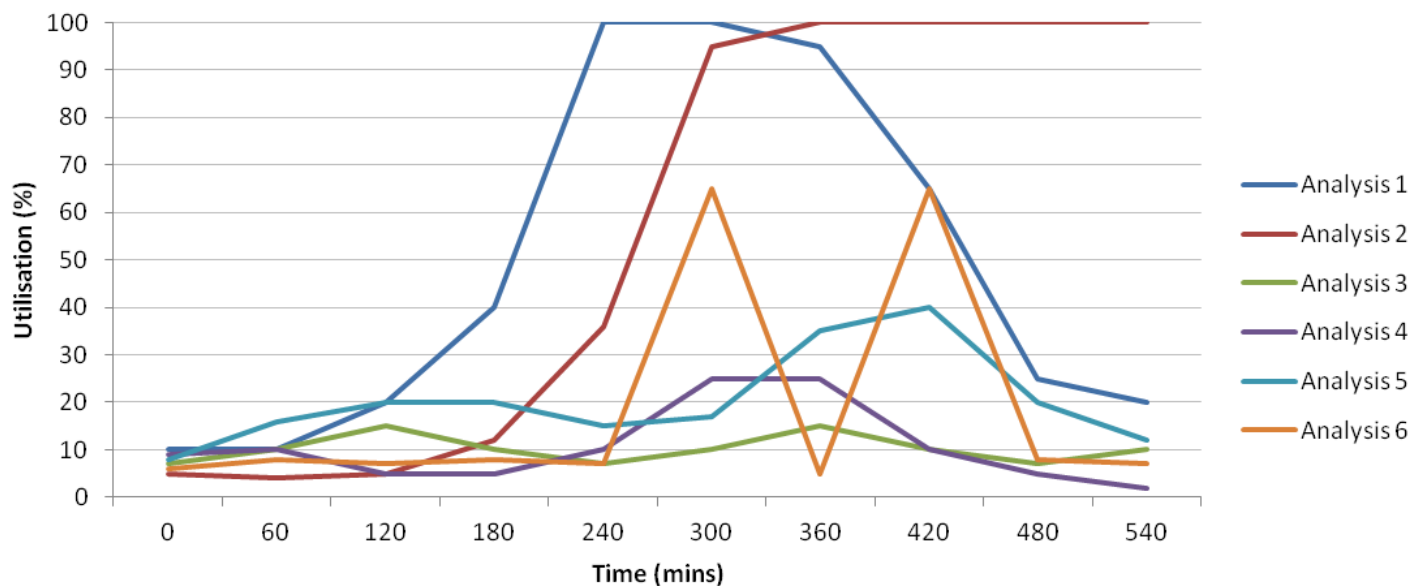


# Outputs

## Collector Gantt Chart

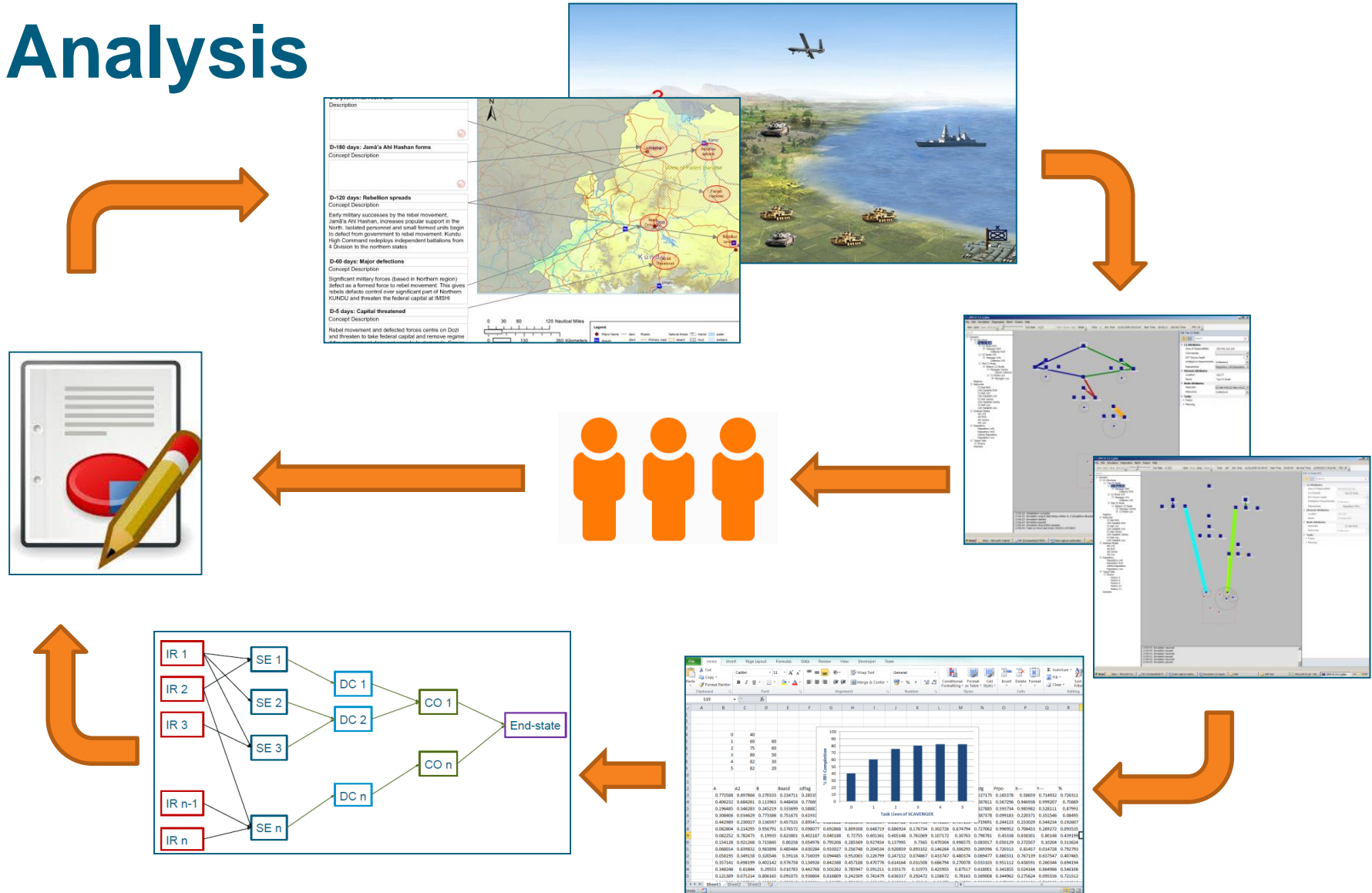


## Analysis Node Utilisation



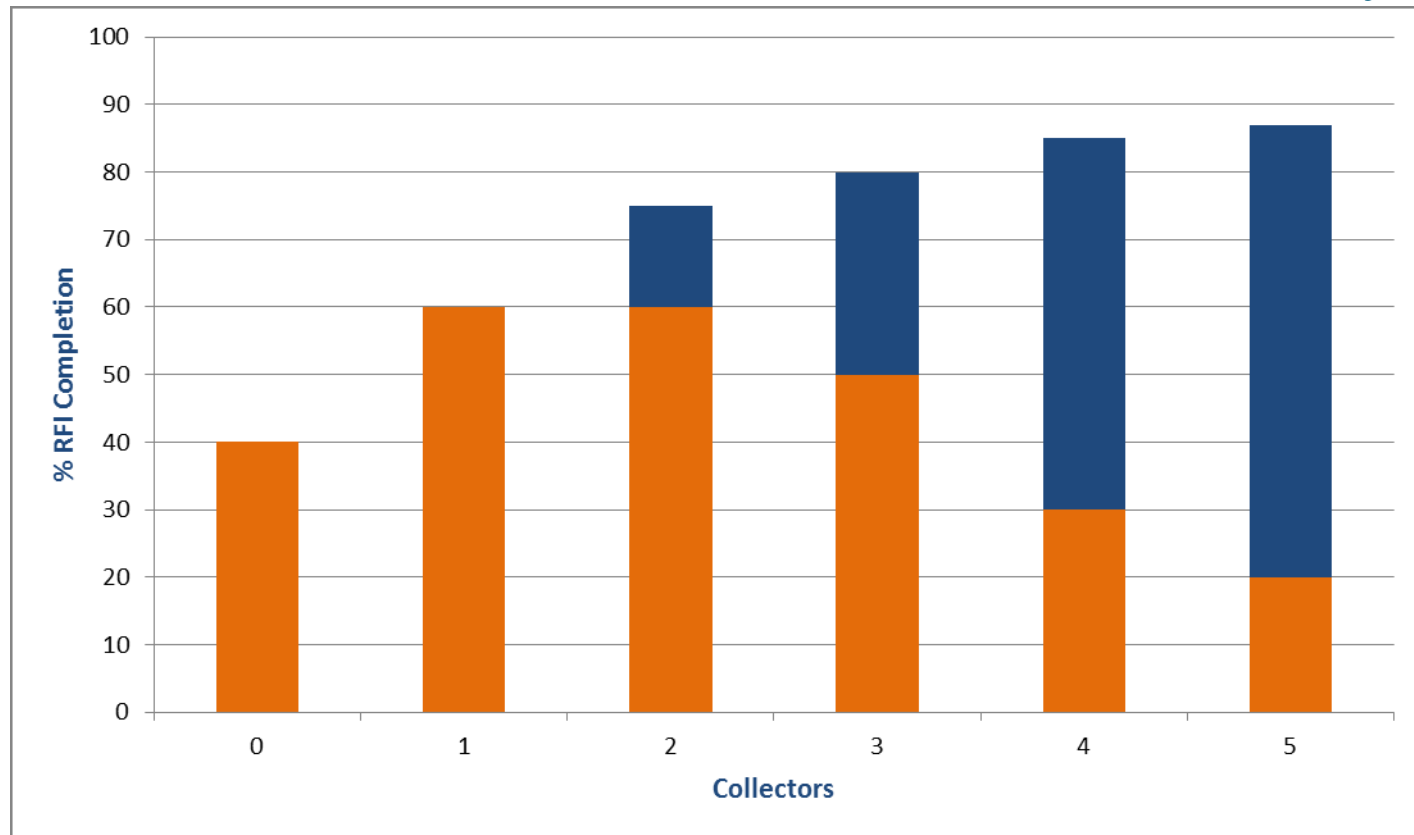
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# Analysis



# Analysis

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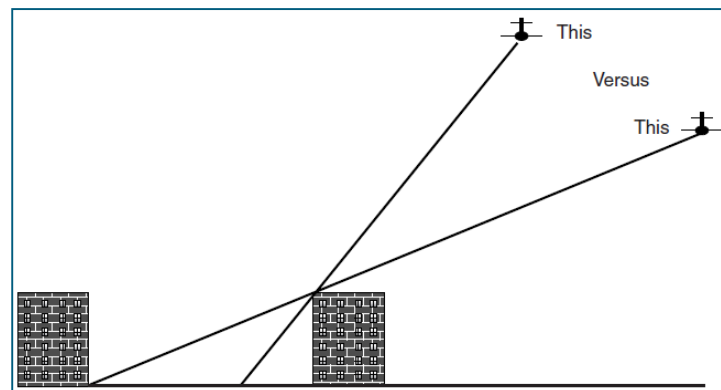
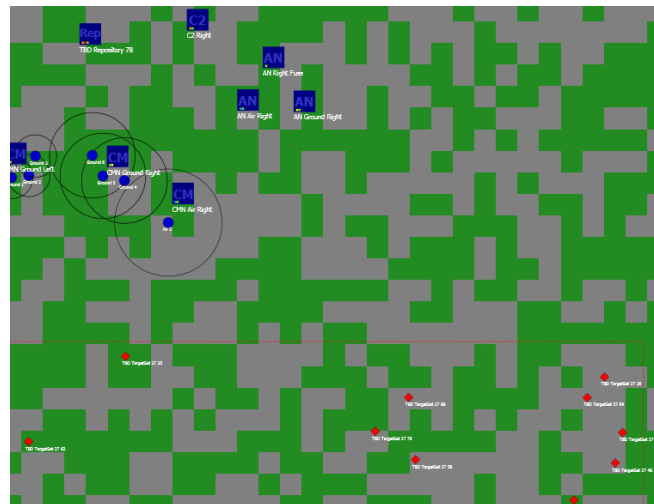


# Typical Uses

- Business Case Support
  - A new collector
  - A new capability for a collector
- Conceptual experimentation in a scenario context
  - Deployment of C2 and analytical capability
  - Communications laydowns
- ISR capability assessment
  - Quantifying impact of gaps
  - Evaluation of treatments

# Future

- Continued use
  - Business Cases & Research
- Further engagement
  - Cross Government and NATO
- Increased functionality
  - Input/Output improvements
  - Experimental harness
  - Analysis networks
  - Terrain and clutter





# Summary

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