
The Cost of Integration

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Background

- Previous Experience
 - DPTCAN, software cost estimating for air platforms.
 - Integration Authority, Land Digitisation Integration team leader. (Note IA workshop in this area)
- Presentation Today
 - Estimating integration costs - likely drivers and how far do we consider them.



- Conventional Cost Forecasting
 - Forecast for individual hardware, software, dedicated staff,...
- Forecasting for a capability - complex matter
 - System of systems (SoS).
 - Through life.
 - Across all lines of development (LoDs).
- Some cost of integration drivers
 - **Stakeholder Relationship and Management.**
 - **Level of Integration.**
 - **System of Systems Data.**



Stakeholder Relationship & Management - 1

- Delivering complex capability involves:
 - multiple projects, organisations, domain experts and working in a dynamic environment.
 - Larger projects - other government departments (OGDs) and other Nations involved.
- Cost involved:
 - Understanding what has to be delivered & when.
 - Identifying stakeholder relationships & managing them, through life across the LoDs.



Stakeholder Relationship & Management - 2

- Internal Project costs, not an issue.
- Relationship with immediate stakeholders
 - minimum - organisations from across the six lines of development and industry.
 - Setting up and managing the governance structure can be complex and time consuming. Do we consider this cost ?
- Wider stakeholder community
 - includes OGDs, Foreign Governments, the media and wider industry base. Do we consider the cost of managing them?



Level of Integration

- Technical perspective:
 - One system exchanging messages with another.
 - Combining data from several sources
 - Loosely or tightly coupled systems.
- Other perspective:
 - Integration of organisation structures and business processes.
 - Are we integrating at strategic, operational or tactical level
 - Based on the level of coupling what is the cost?

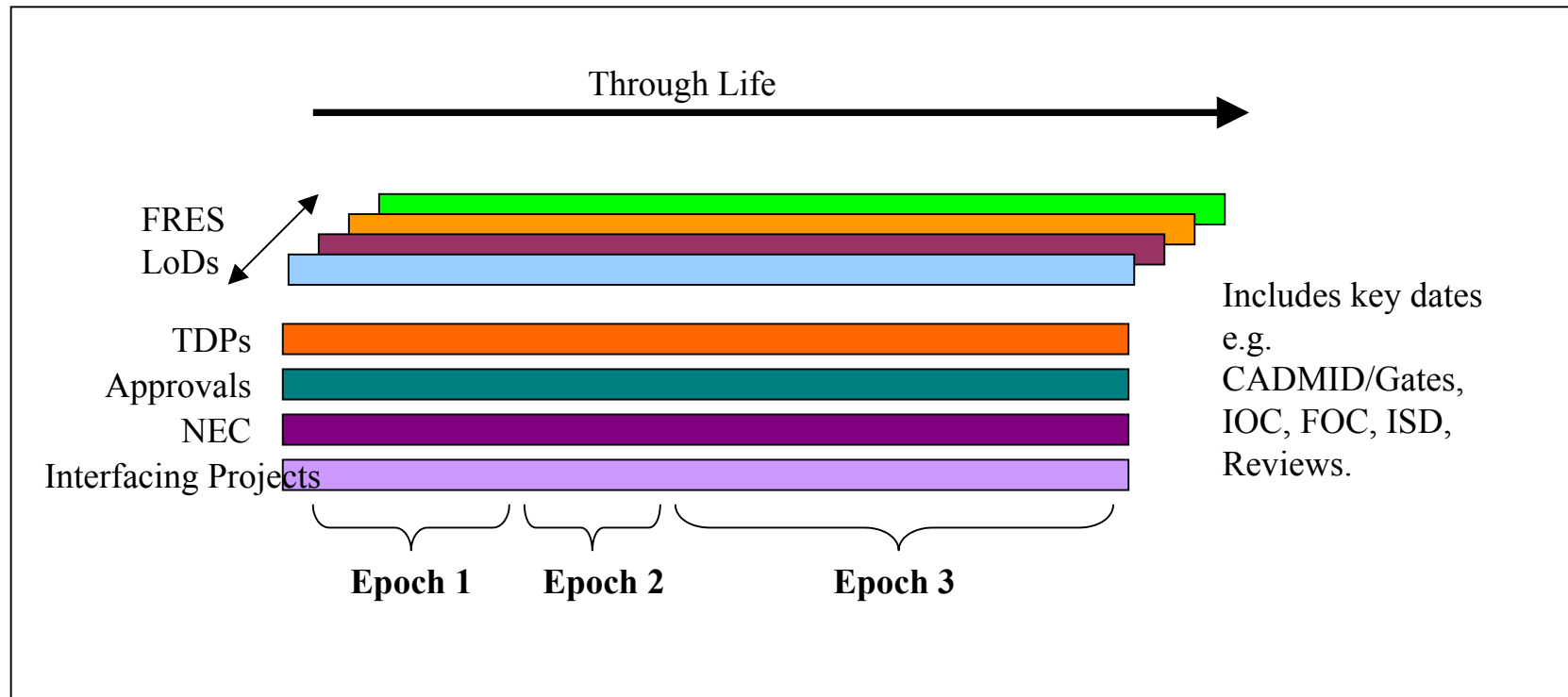


System of Systems Data

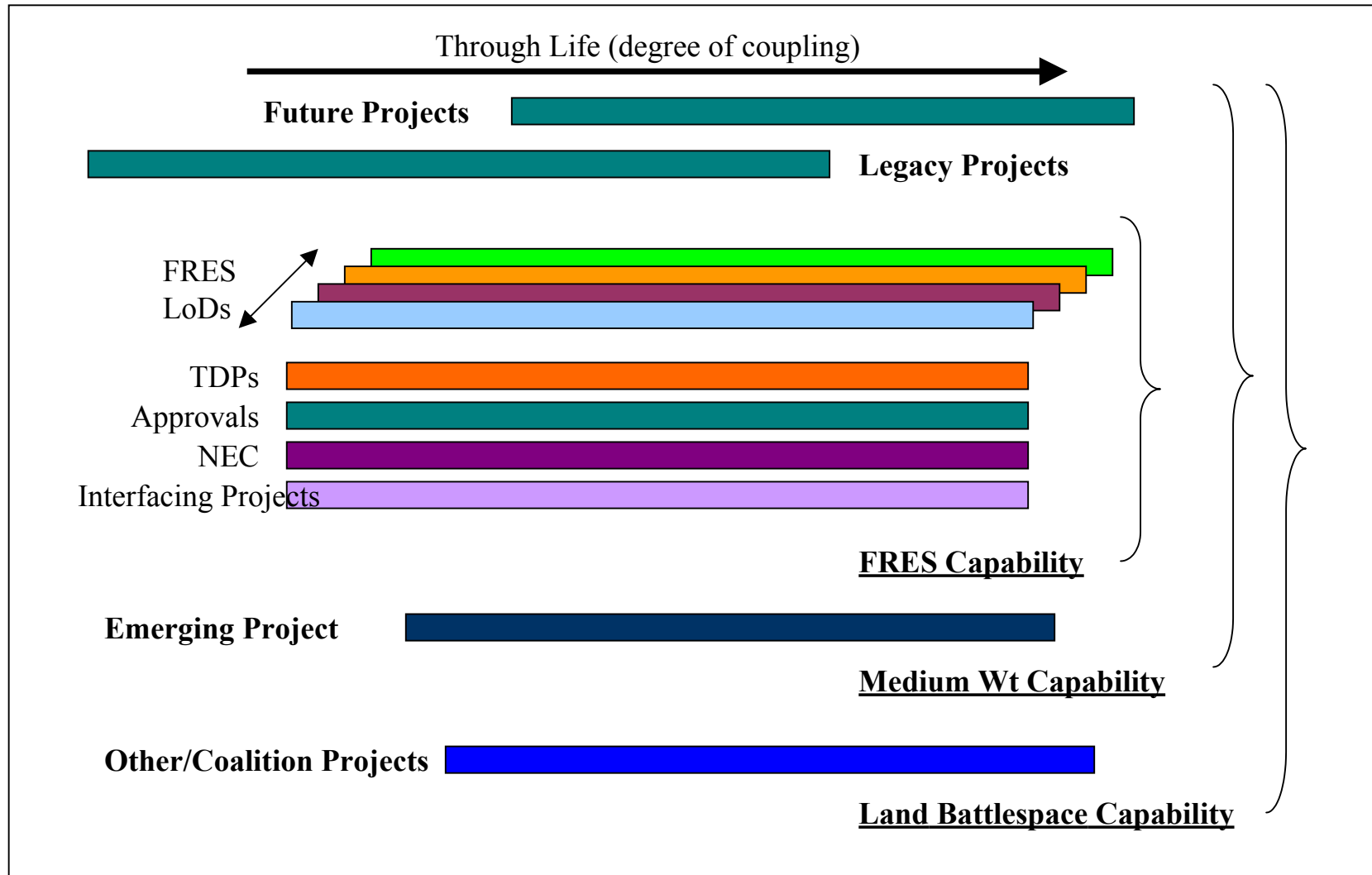
- System of systems:
 - consist of legacy and emerging systems, and need to take account of future systems.
 - Different technologies.
 - Different data types, formats and standards.
 - Develop business rules to manage data
 - Manual effort required, in the absence of reliable automated tools.
 - Considerable through life cost?



Cost of Integration Consideration - FRES



Cost of Integration Wider Context



Cost of Integration - Conclusion

- Emergent cost drivers to deliver a system of systems need to be identified.
- Consider availability of:
 - appropriate data for modelling
 - mature techniques
 - sufficient expertise



Answers

