

FINSE SEMINAR 25.09.01

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- Quality Manager in Patria

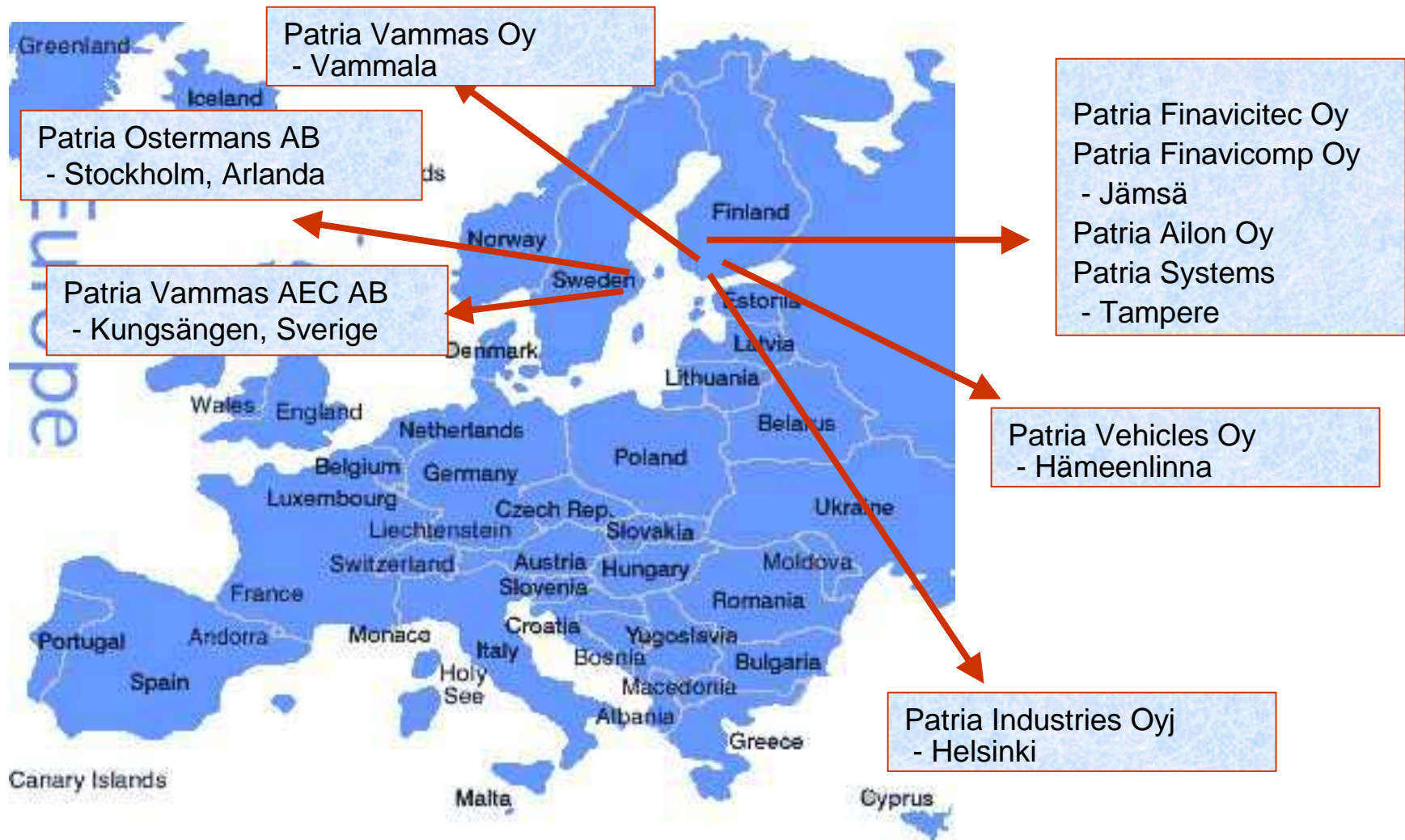
Content of Presentation

- What is PATRIA ?
- What is Systems Division ?
- How we execute the System Engineering

PATRIA

- Patria was formed in 1996 when Finnish Defence Companies were consolidated
- Patria bought Systems Division in 1997
- Patria has four Business Areas
 - ◆ Land Systems
 - ◆ Aviation
 - ◆ New Technologies
 - ◆ Civil Products & Services
- Patria has about 2300 employees

Patria's facilities



Systems

Business Units

Space Electronics

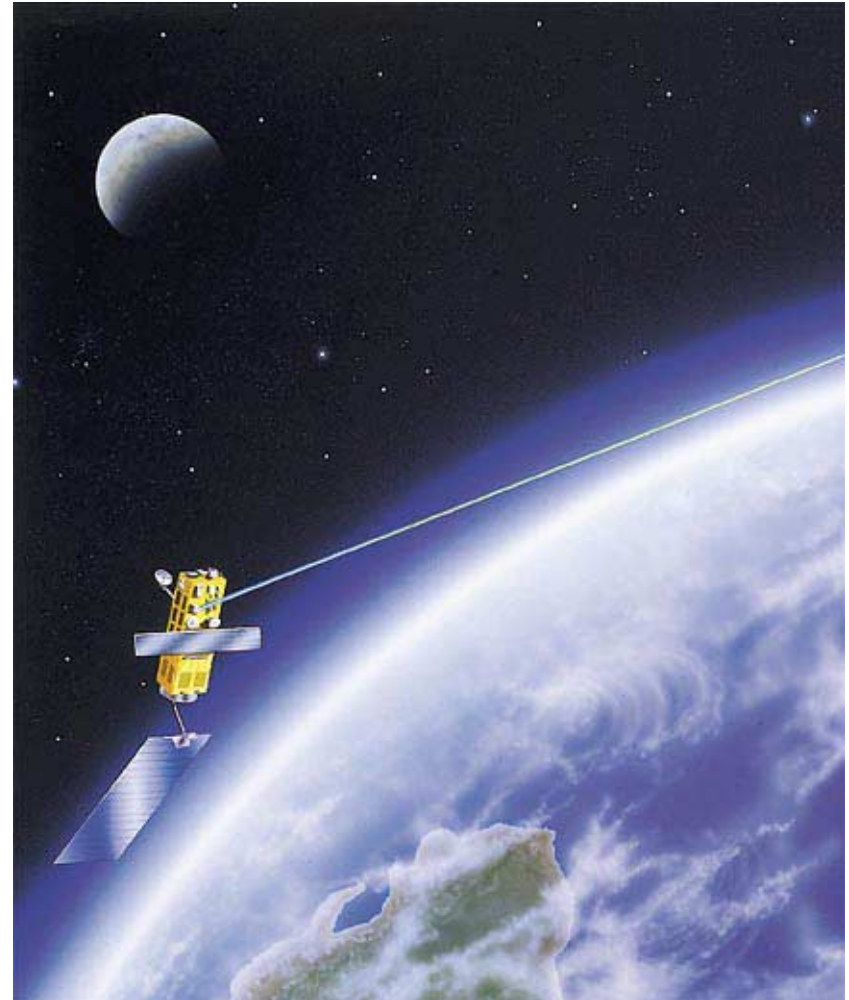
- Imager electronics
- Data processing systems
- Power electronics

Defence Systems

- Underwater surveillance
- Air surveillance

Command & Control

- Tactical Message Switching Network
- Fire Control System
- Fibre Optic Link
- Optronics

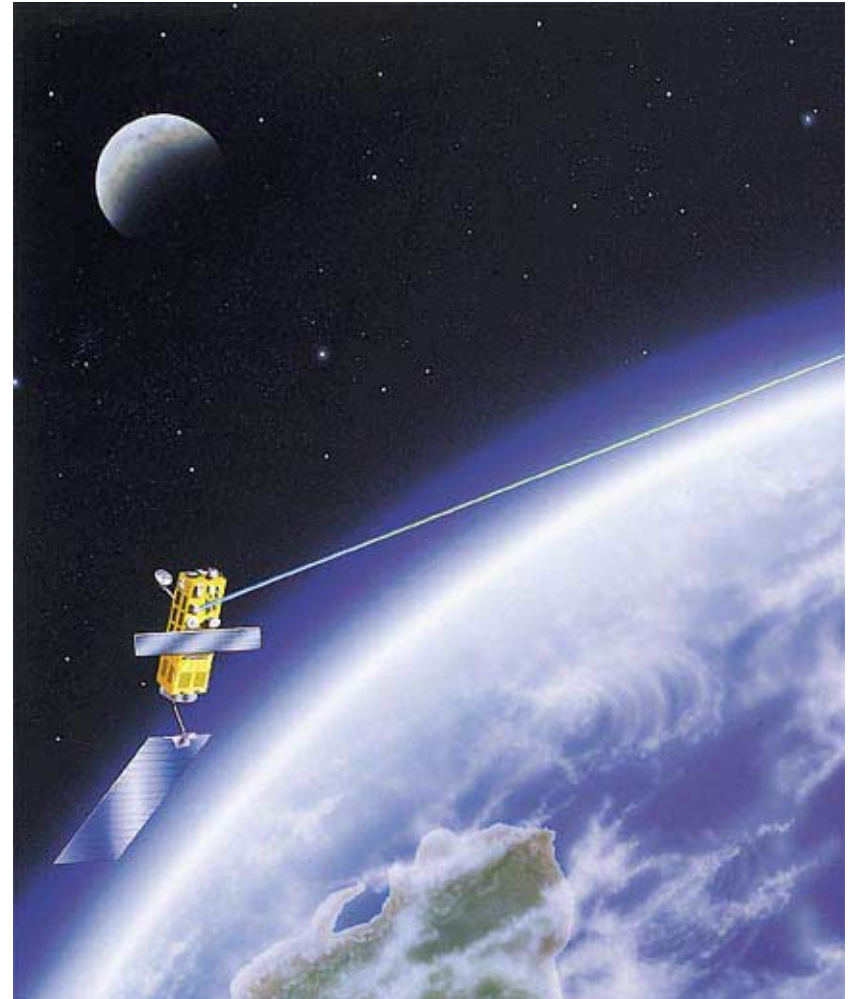


Systems

- High quality systems for the extreme environment
- Preferred partner in R&D projects
- Over 20 years experience
- Largest space electronics company in Finland
- Largest underwater surveillance systems supplier in Northern Europe

Customers

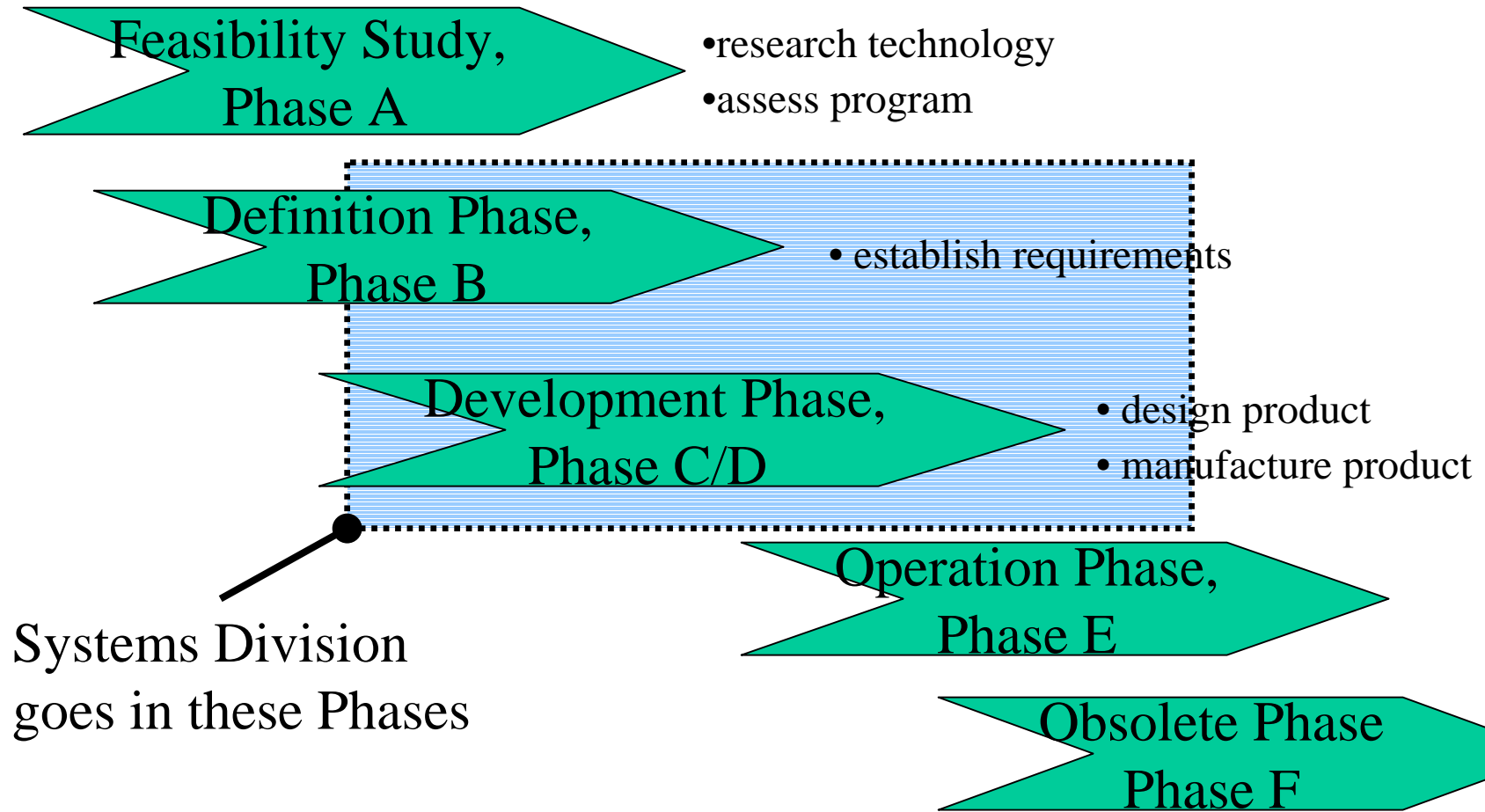
- Space agencies (ESA) and space industry
- Defence: Navies, Coast Guards, Air Force, Land Force



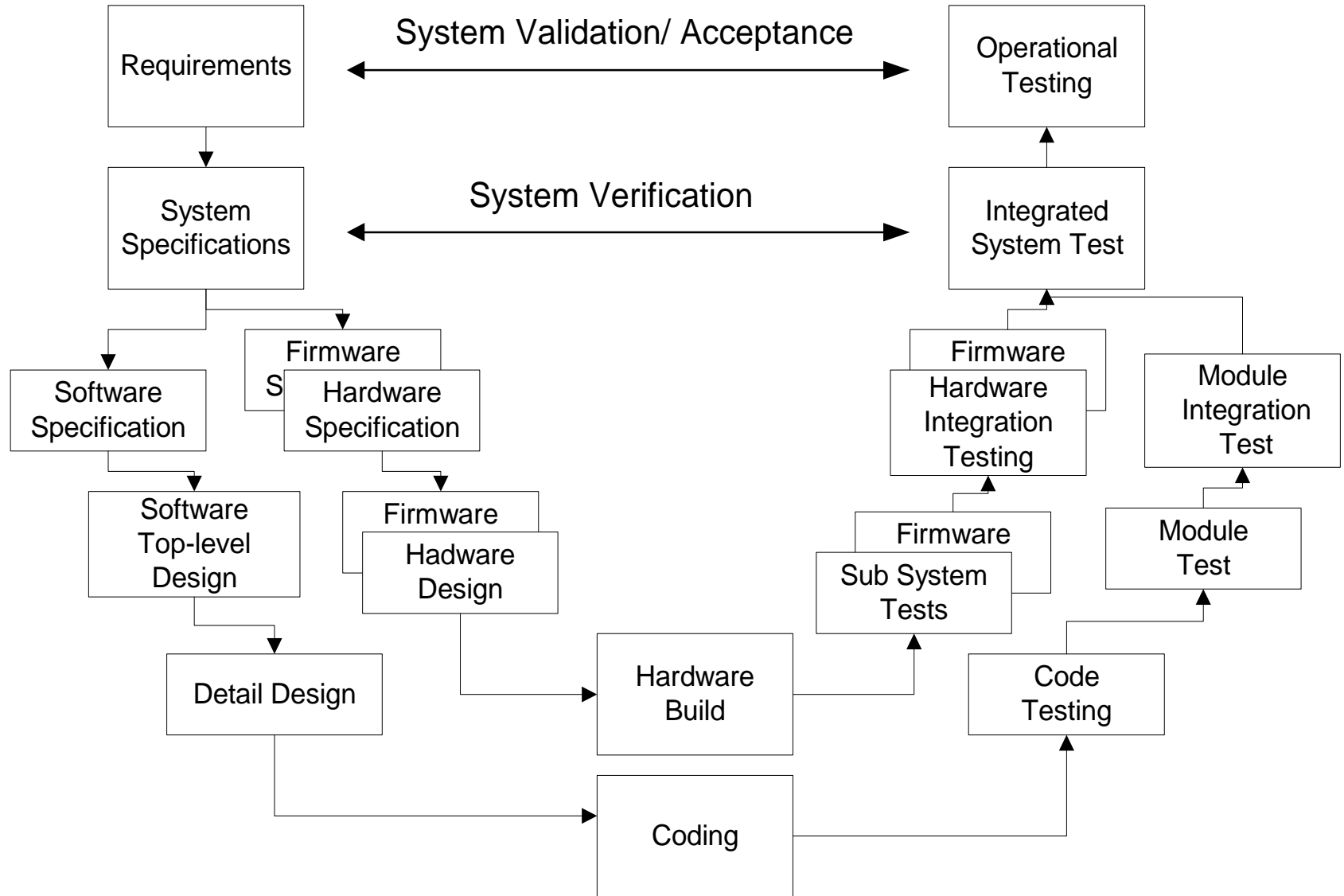
Systems' products



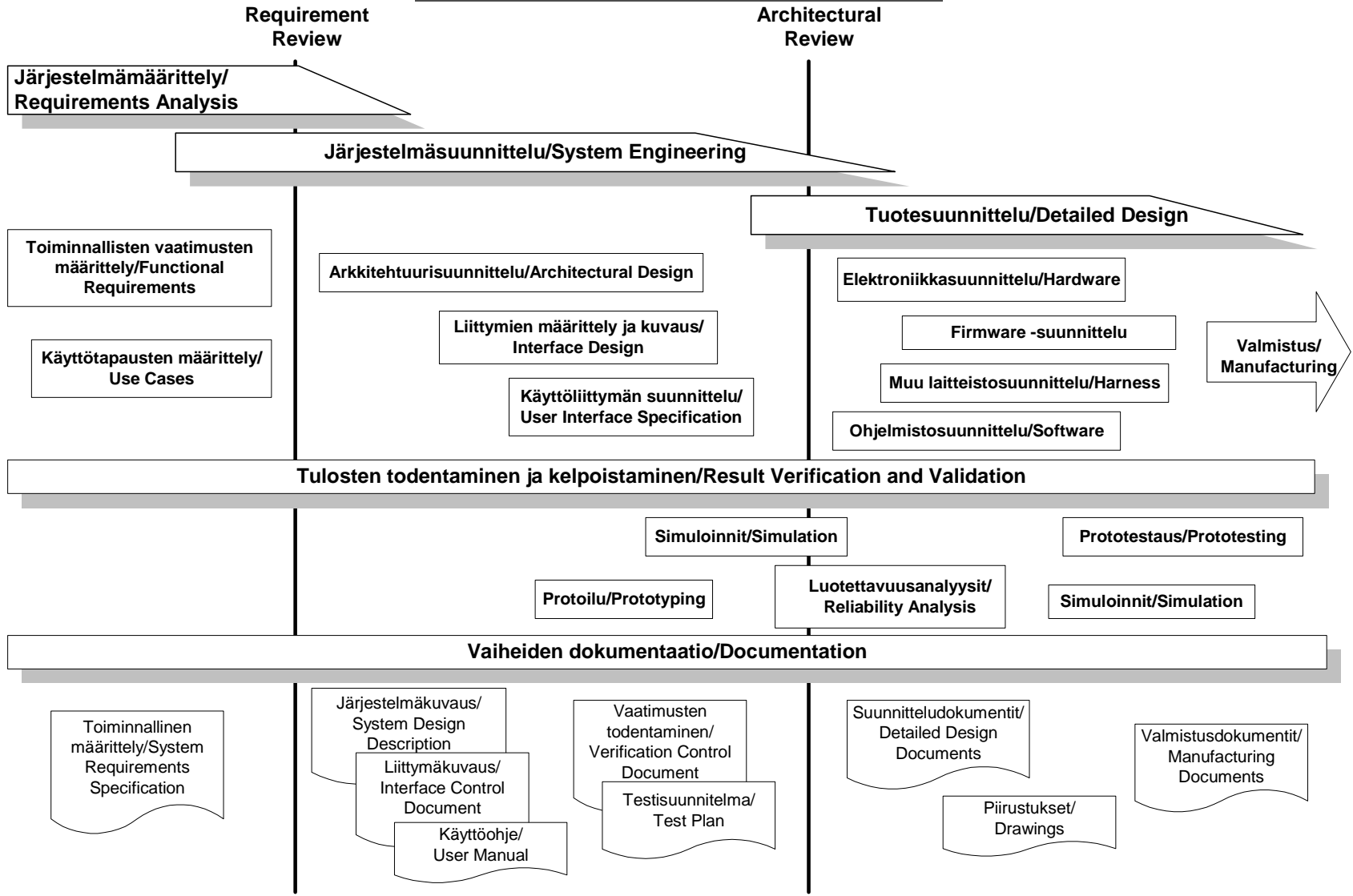
Program Phases of Space mission



System Engineering in our Division



System Engineering Process/ Suunnitteluprosessi



Requirement Management

- The main goals of the requirement management are
 - 📄 ensure that the system requirements are fulfilled
 - 📄 create the system's requirement specification document
 - 📄 divide the system requirements to the next lower level
 - 📄 check reviews that the system requirement are fulfilled

Interface Management

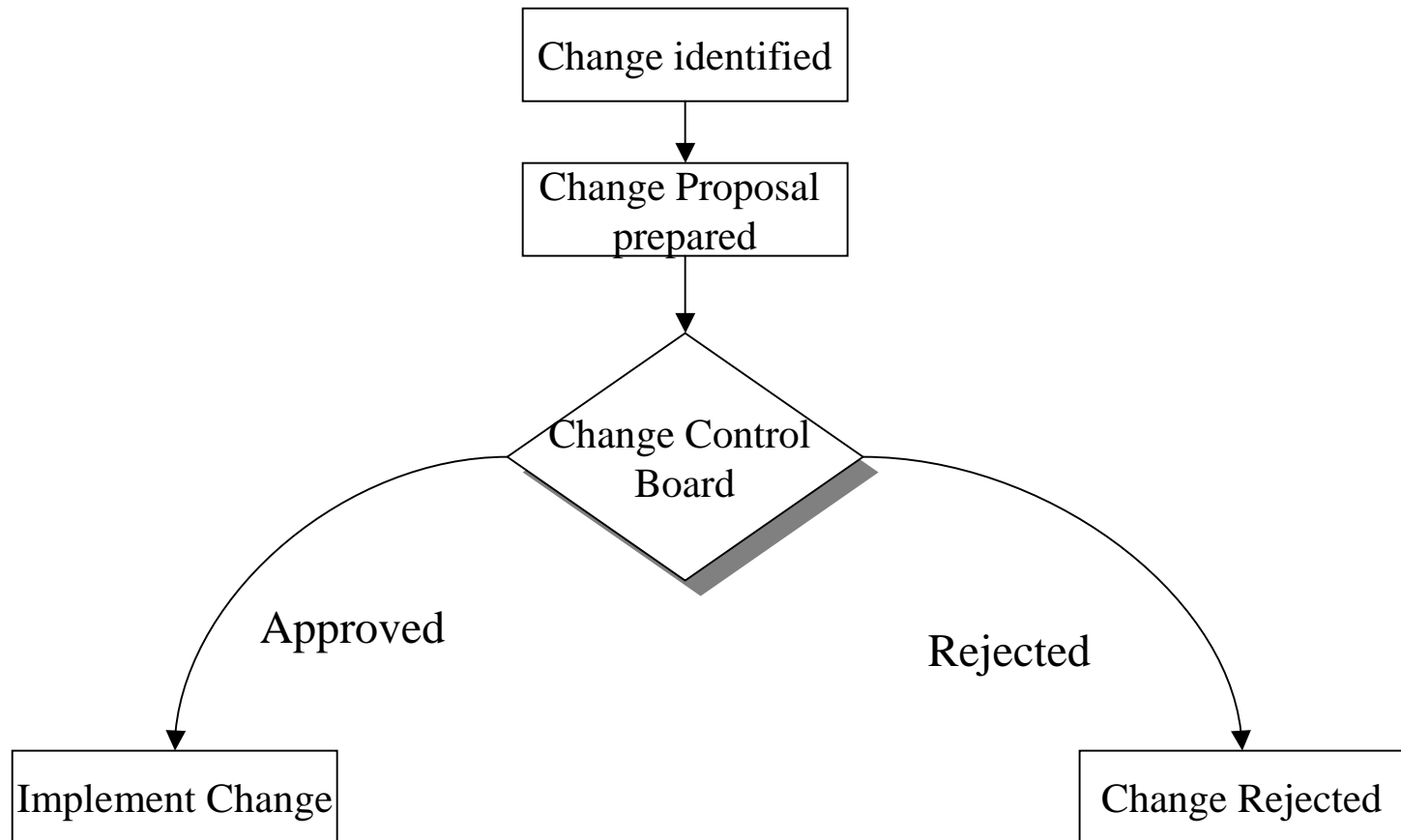
- The main goals of the interface management are
 - 📄 ensure that the system interface requirements are fulfilled
 - 📄 ensure that the system interface (software and hardware) are well defined
 - 📄 create the system's interface document
 - 📄 check reviews that the interface document are updated

Traceable Management

- The main goals of the traceable management are
 - 📄 ensure that the system requirements are traced
 - 📄 ensure that the system traceable are well defined
 - 📄 create the system's verification control document
 - 📄 check reviews that the verification control document are updated and it freezes after architecture review

Change Management

- It has to be a formal change process

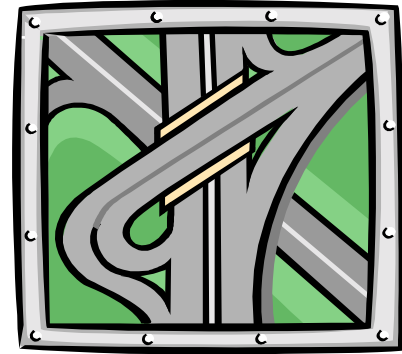


Outputs of the System Engineering phase

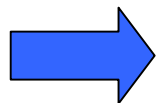
- Requirement Specification
- System Design Description
- Interface Control Document
- User Manual
- System Test Plan
- Verification Control Document



Traps of the System Engineering



- Not to analyse requirements with a customer
- Go too early to manufacturing phase
- Not to use a formal change management process
- Not to use a formal risk management process
- Nobody is responsible or controls the system architecture
- The team prepare to reviews poorly



The team will start designing at the review meeting

How can we assure the system engineering phase

- Keep reviews; requirement review and architecture review
- Make a prototype or simulate a selected part of the system
- Assessment of the risks in the system engineering
- Product Assurance Manager
 - ◆ participation to the choice and approval of the used methods and tools
 - ◆ approbation and validation of possible subcontractors
 - ◆ checking of the documentation issued during this phase against the defined standards

Conclusions

