

Galileo Public Private Partnership Financial Plan

27 February 2001 - Brussels

Agenda

- Marsh: Company Overview
- Objectives
- Galileo Business Segments
- Business Plan
 - Concept
 - Key Assumptions
 - Results
 - Risk Analysis
 - Key Risk Factors
 - Modeling Uncertainty
 - Results
- PPP Options
- Conclusion

Marsh: Company Overview

- Marsh & McLennan group of companies:

 - Insurance brokerage (Marsh)

 - Consulting services (Mercer)

 - Fund management (Putnam)

- Marsh - Aerospace related activities:

 - Traditional insurance

 - New products

 - Project finance

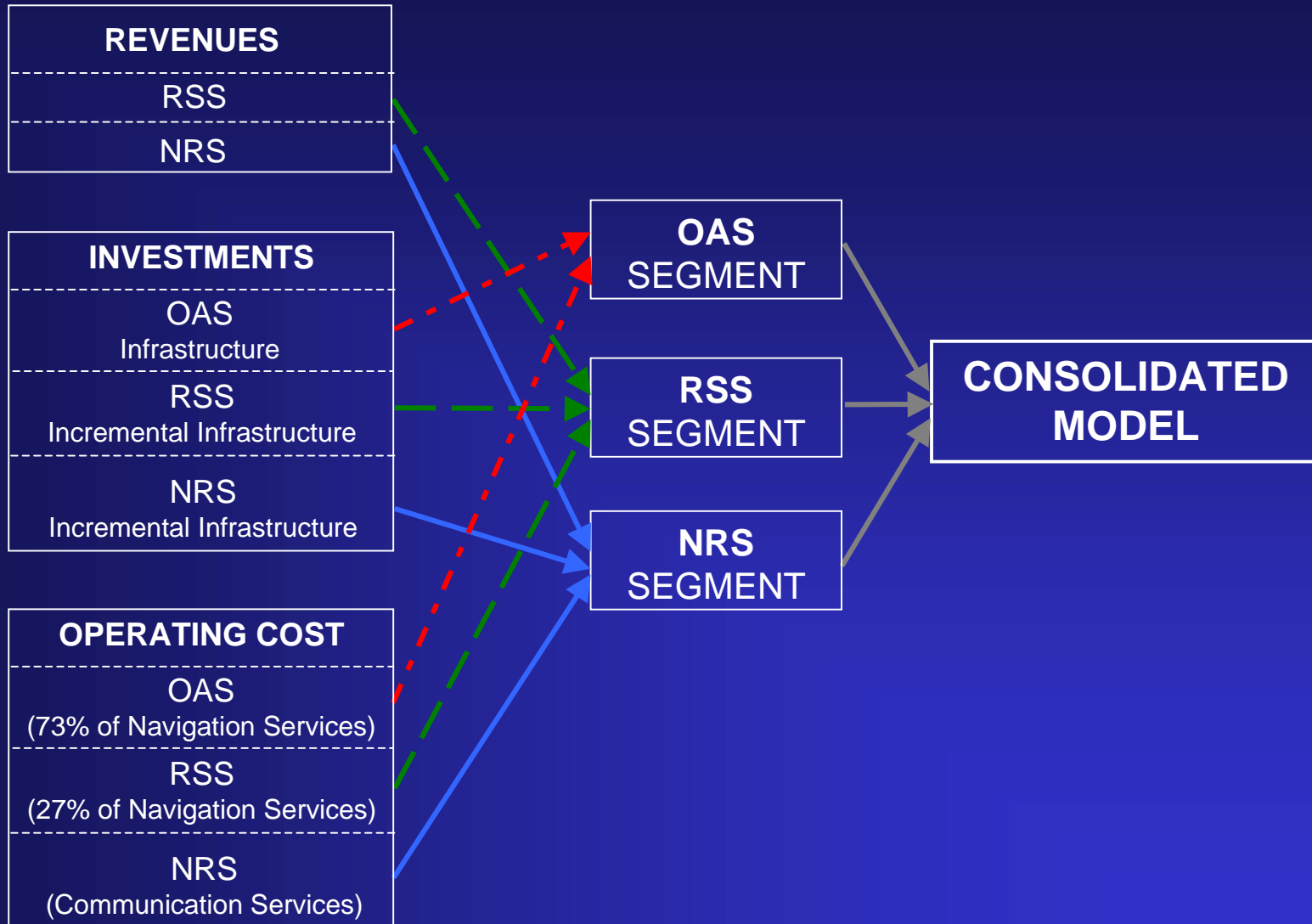
Objectives

- Risk assessment of Public Private Partnership concept for Galileo from an investor's perspective
- Key steps:
 - Establish consolidated business plan based on the revenue / cost projections provided by previous GEMINUS working groups
 - Define key risk factors to the project ("risk mapping") and their impact on the business plan
- Identify viable PPP structure(s)

Galileo Business Segments

- **OAS (Open Access Service)**
Basic positioning signal, competition to GPS solution
Assumption: no revenue generation
- **RSS (Regional Safety Service)**
Improved integrity, full open access (EGNOS, Civil Aviation)
No encryption, no direct user charges
- **NRS (Navigation Related Services)**
Basic data communication capability related to navigation services
Key markets: Fleet Management, Personal / Road

Business Plan - Concept

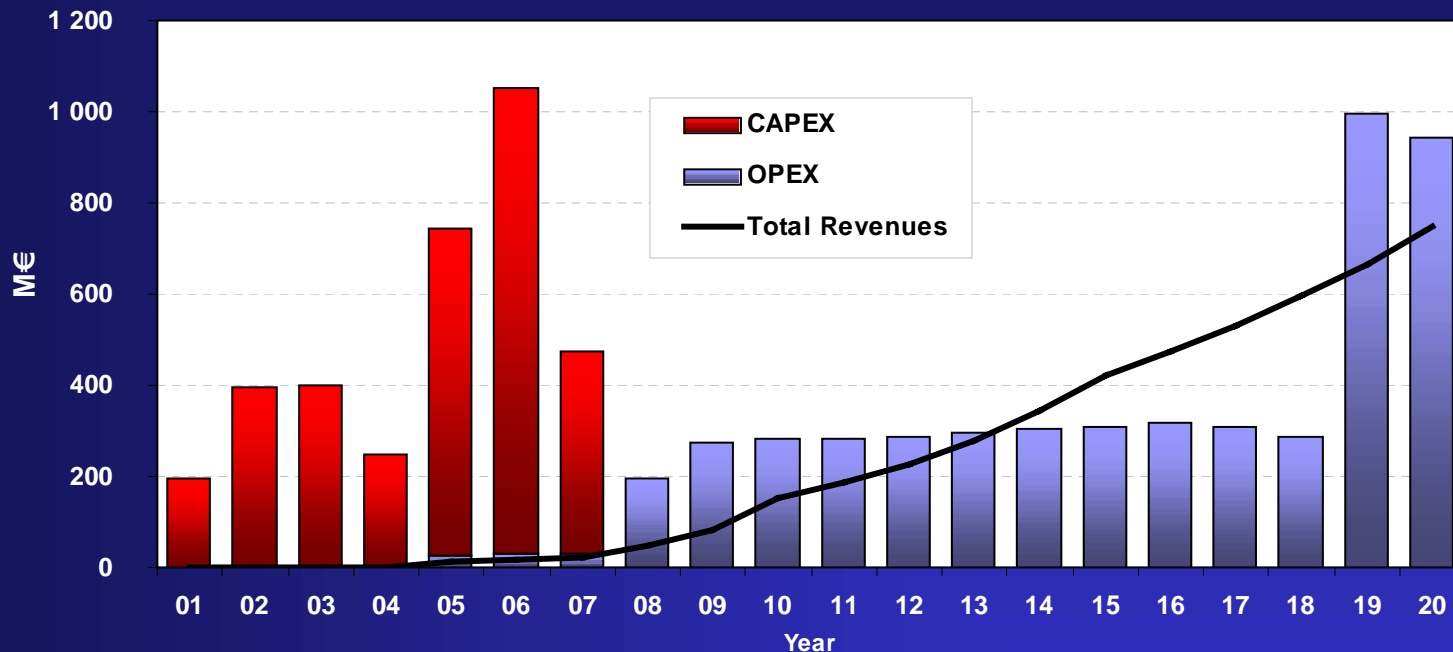


Business Plan - Key Assumptions

- **Schedule:**
 - EGNOS operational in 2003
 - Galileo operational in 2008
- **GAS (“Government Access Service):**
 - Not included at this stage
- **NRS Services:**
 - No technical barriers in respect of competitive NRS services (no need for dial-up process etc.)

Business Plan - Results

Consolidated Cash-Flow:



| Overall Cash-Flow M€ | Total NPV | 2001-2005 | 2006-2010 | 2011-2015 | 2016-2020 |
|----------------------|--------------|--------------|--------------|------------|------------|
| Revenues | 1553 | 11 | 325 | 1457 | 3013 |
| OPEX | -1785 | -28 | -809 | -1480 | -2849 |
| CAPEX | -2608 | -1958 | -1469 | 0 | 0 |
| Total | -2840 | -1975 | -1953 | -23 | 164 |

Business Plan - Results

- Cash-flow by segment: OAS

| OAS Cash-Flow M€ | Total NPV | 2001-2005 | 2006-2010 | 2011-2015 | 2016-2020 |
|------------------|--------------|--------------|--------------|-------------|--------------|
| Revenues | 0 | 0 | 0 | 0 | 0 |
| OPEX | -911 | 0 | -361 | -747 | -1647 |
| CAPEX | -2120 | -1555 | -1255 | 0 | 0 |
| Total | -3031 | -1555 | -1615 | -747 | -1647 |

- Cash-flow by segment: RSS

| RSS Cash-Flow M€ | Total NPV | 2001-2005 | 2006-2010 | 2011-2015 | 2016-2020 |
|------------------|-------------|-------------|-------------|------------|------------|
| Revenues | 577 | 11 | 195 | 561 | 895 |
| OPEX | -516 | -28 | -282 | -411 | -668 |
| CAPEX | -306 | -279 | -95 | 0 | 0 |
| Total | -245 | -295 | -182 | 151 | 227 |

- Based on current projections, the OAS (infrastructure) and RSS segments will unlikely be able to raise private investor interest

Business Plan - Results

- Cash-flow by segment: NRS

| NRS Cash-Flow M€ | Total NPV | 2001-2005 | 2006-2010 | 2011-2015 | 2016-2020 |
|------------------|-----------|-----------|-----------|-----------|-----------|
| Revenues | 976 | 0 | 129 | 896 | 2118 |
| OPEX | -357 | 0 | -166 | -323 | -535 |
| CAPEX | -182 | -125 | -119 | 0 | 0 |
| Total | 436 | -125 | -156 | 573 | 1584 |
| NPV (Cumulative) | | -103 | -205 | 12 | 436 |

Assuming that the basic infrastructure cost are covered by other (public) sources, the NRS segment shows a NPV of 436M€ over the next 20 years after NRS specific CAPEX of 182M€.

This segment has “start-up” characteristics and shows significant market potential. However, break-even is not expected until 2014.

Business Plan - Risk Analysis

- Financial analysis is increasingly using stochastic (rather than deterministic) models:

Definition of key model variables in terms of:

- type of value distribution (normal, exponential etc.)
- mean value, standard deviation
- correlation between variables

Using Monte-Carlo simulation, this approach delivers:

- Full range of potential results
- Probability distribution of results

However, any prediction is only as good as the quality of the input. The proposed business model concept will therefore need to be updated as better information becomes available.

Business Plan - Risk Analysis

- Key program risk areas:

Technical / Architecture risks

Program Management / Planning risks

Market / Competition risks

Operational risks

Financing risks

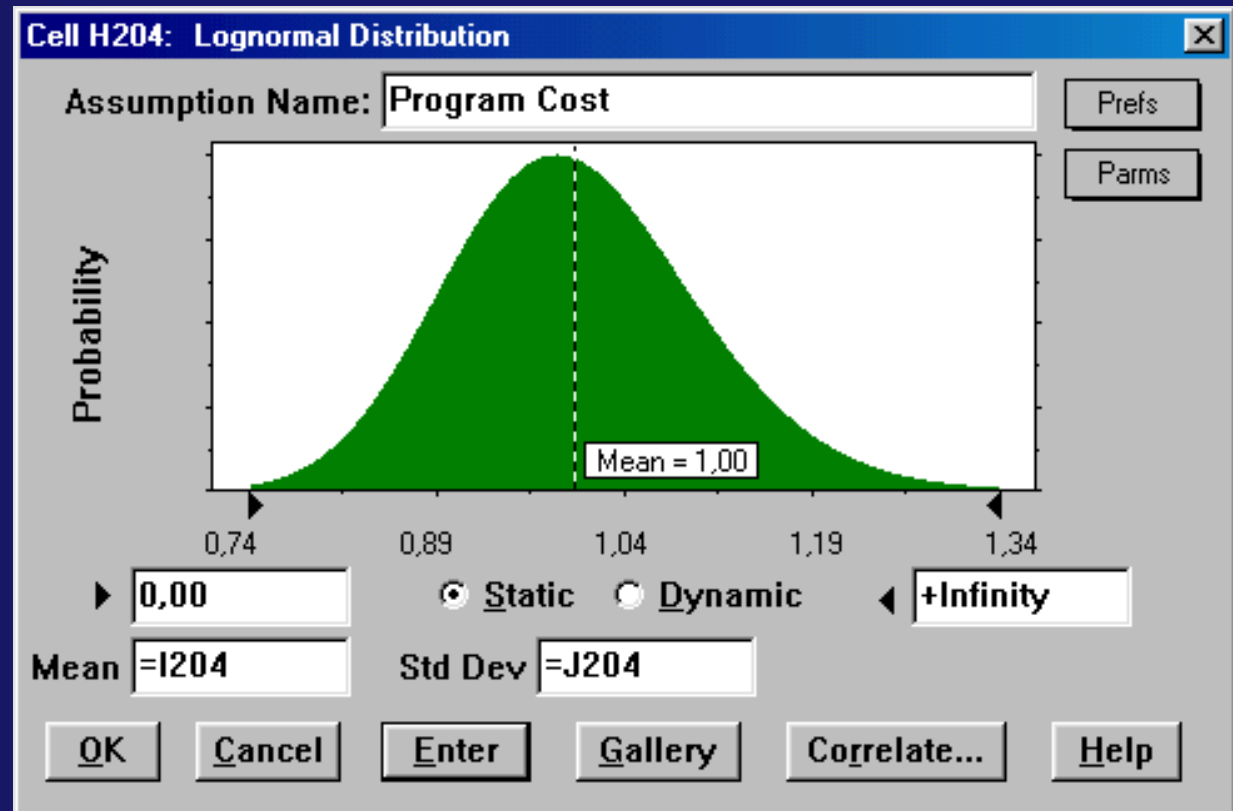
Political, Regulatory and Legal, Conflict of Interest risks

War, Terrorism and Environmental risks

Thorough assessment of these key risk areas is required in order to define the probability distribution of the business plan key variables.

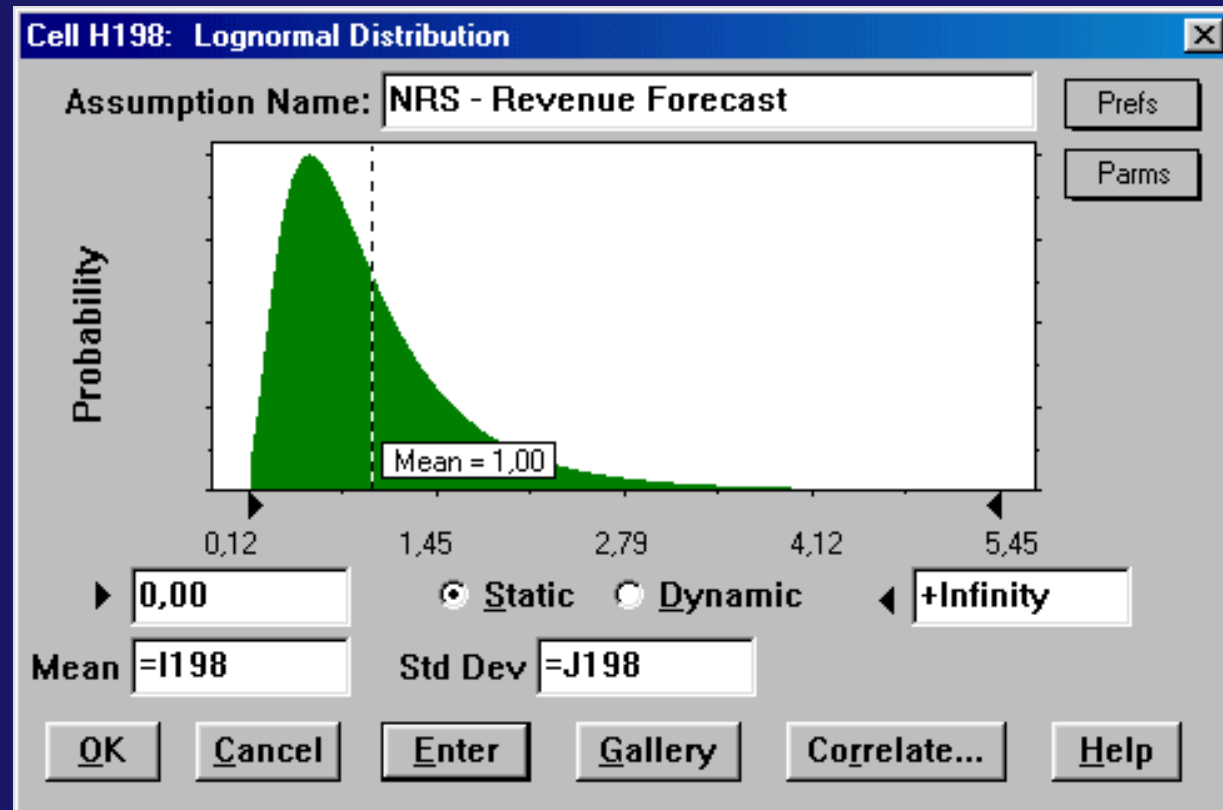
Business Plan - Risk Analysis

- Modeling Uncertainty - Program Cost:



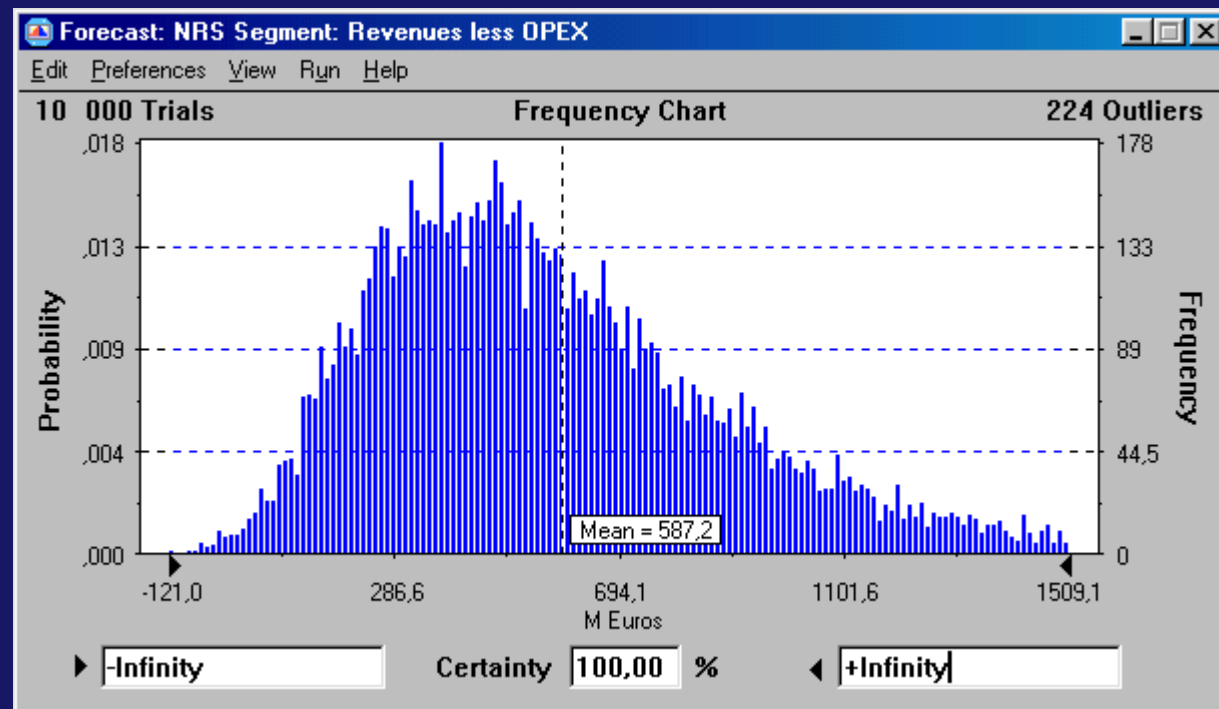
Business Plan - Risk Analysis

- Modeling Uncertainty - Revenue Forecast:



Business Plan - Risk Analysis

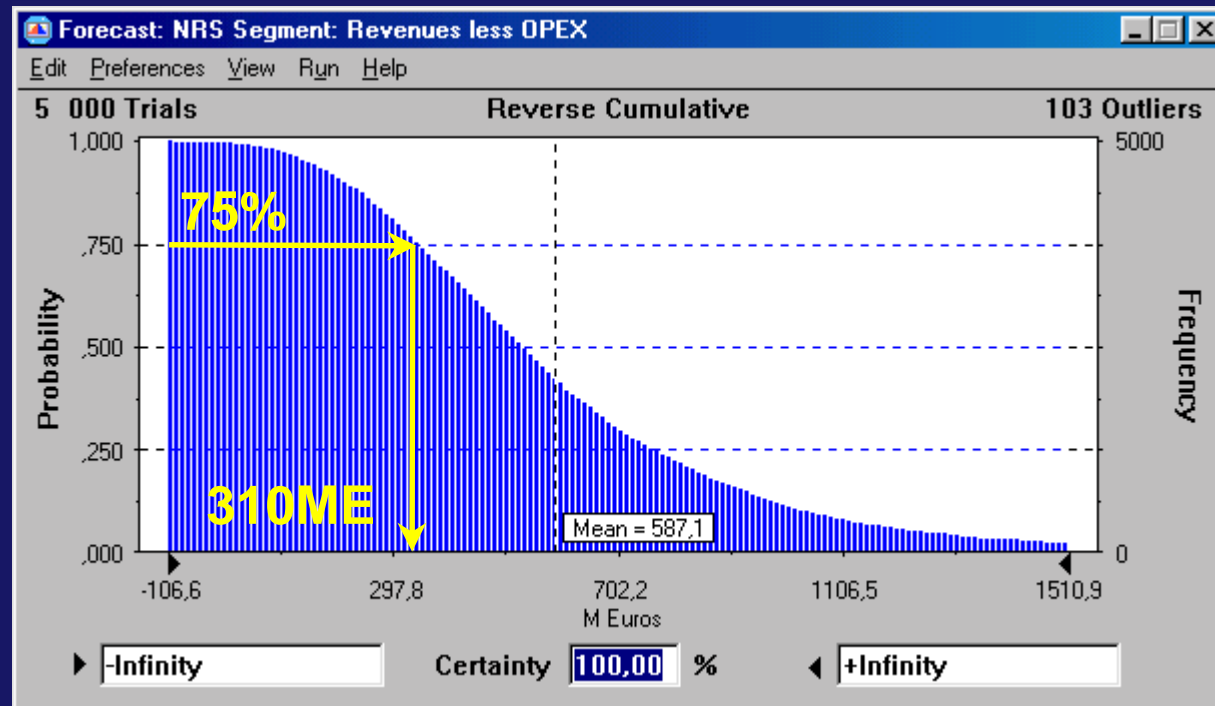
- Result - NRS Segment: Gross Margin



This chart shows the frequency distribution of revenues less OPEX (in PV terms) from 2001 to 2020.

Business Plan - Risk Analysis

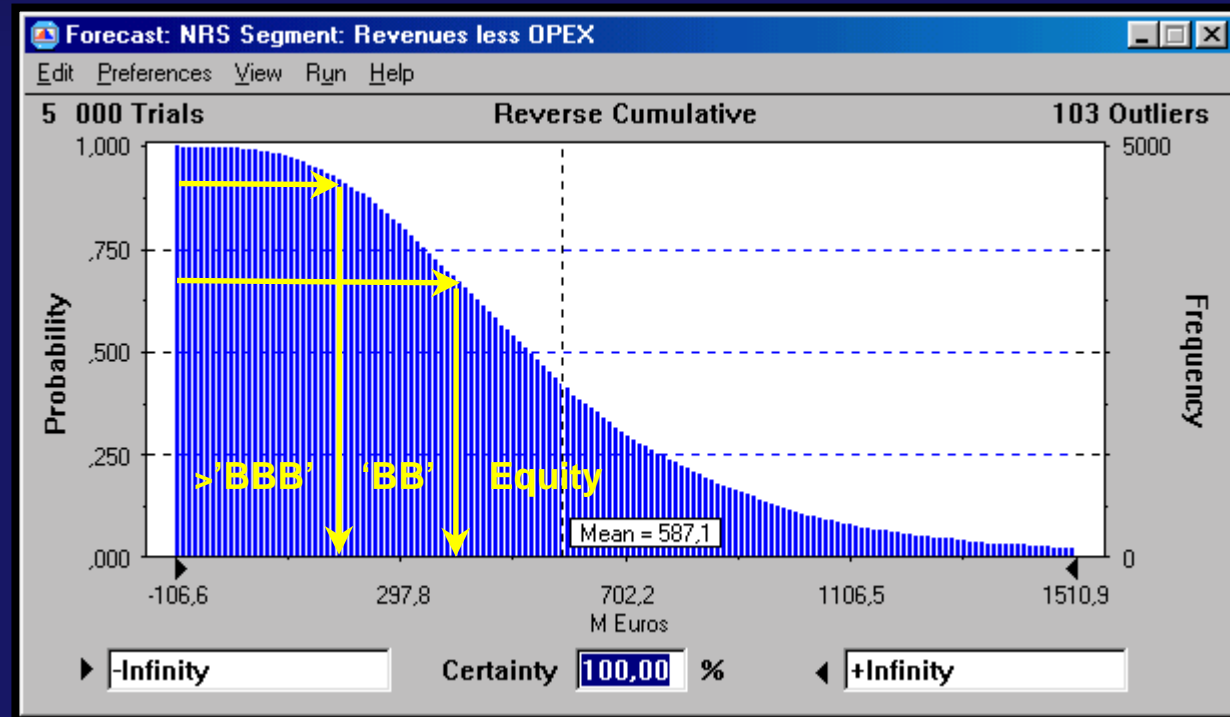
- Result - NRS Segment: Gross Margin



This chart shows the likelihood that the present value of the NRS revenue stream less the associated operating cost lies above a given level.

Business Plan - Risk Analysis

- Result - NRS Segment - Risk Slices



Based on a 15 year average life, it is estimated that commercial banks would be willing to finance between 180M€ and 370M€ ('BBB' to 'BB' risk) allowing a debt / equity ratio of approximately 1.0.

PPP Options

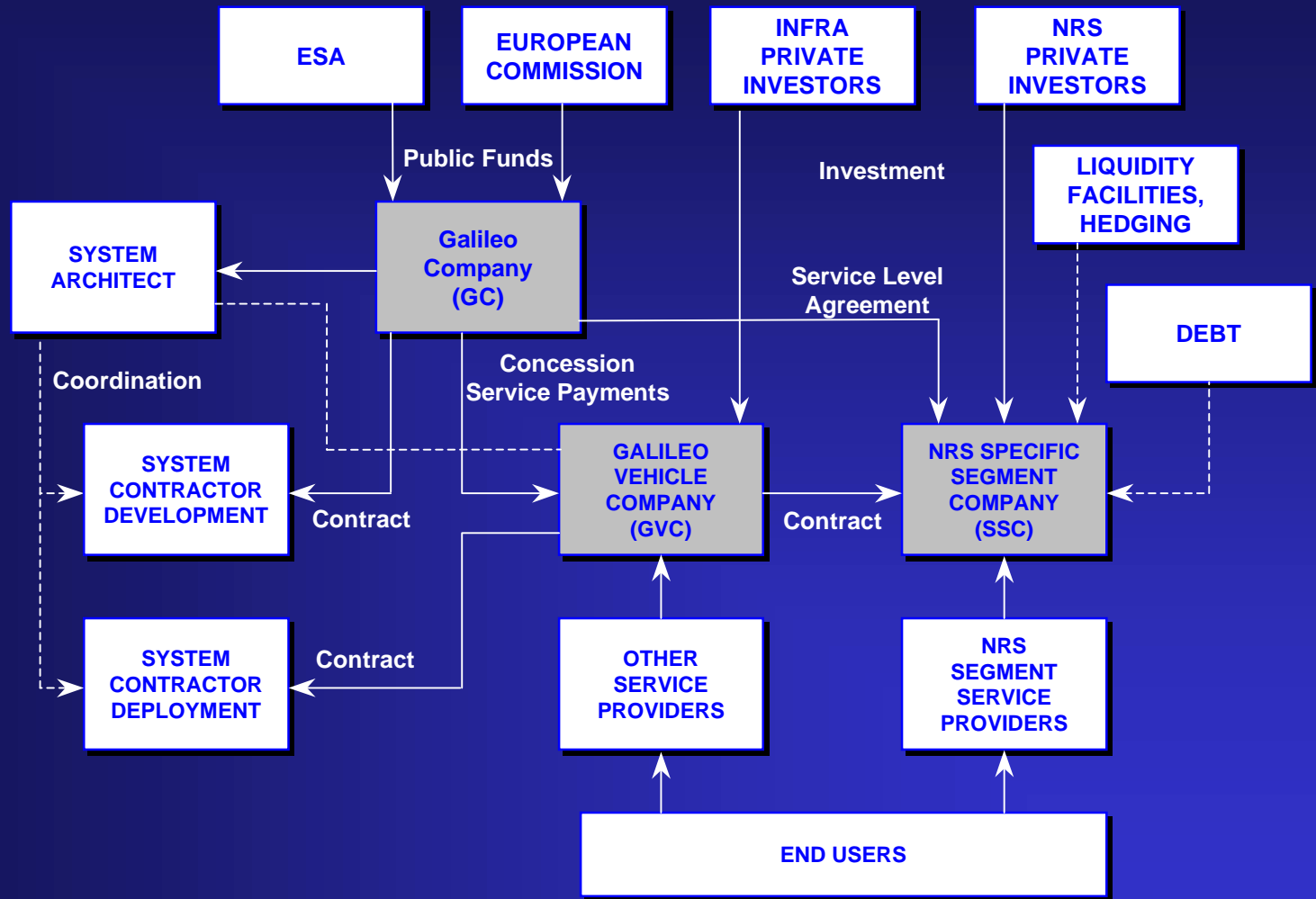
- PFI (Private Funding Initiative):
 - Majority of infrastructure cost borne by public sources (1,5Bn€ to cover CAPEX requirements 2001 to 2005)
 - Subsequent funding provided by the private sector, based on a guaranteed revenue level that would be calculated to provide a minimum required return to investors
 - This concepts allows to
 - attract investors that consider Galileo a strategic investment opportunity
 - shift the risk of poor execution (cost overruns etc) to the private sector

PPP Options

- Segmented PPP Approach:
 - The public sector provides the basic system infrastructure
 - NRS segment is offered to private investors that are bearing the development and market risk
 - The Galileo Vehicle company provides the Service Provider with a service level guarantee

PPP Options

- Segmented PPP Approach - Potential Structure:



Conclusions

- Current stage of program definition makes it difficult to attract private investors today
 - ⇒ Iterative process to provide regular updates as better information becomes available
 - ⇒ Flexible PPP structure
- Time to market is important to protect the possibility to capture substantial market share
- Assignment of a system architect with clearly defined responsibilities is crucial to program success



THANK YOU