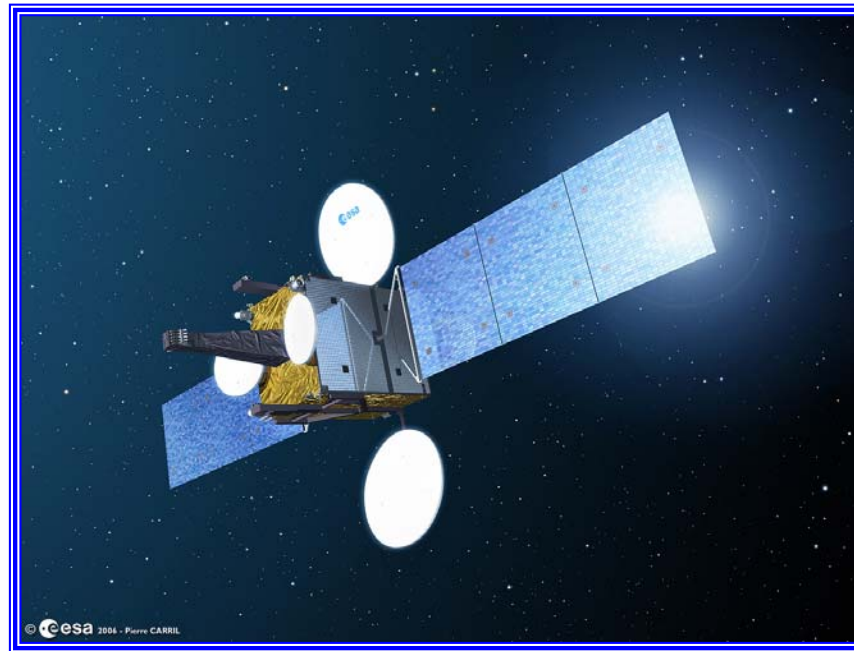


ARTES 11

Small GEO Platform Contract



28th March 2007 – Berlin

The ESA Small Geostationary Satellite initiative is aiming at the definition of a general purpose small geostationary satellite platform which will enable European players to compete effectively in the commercial telecom market for small platforms

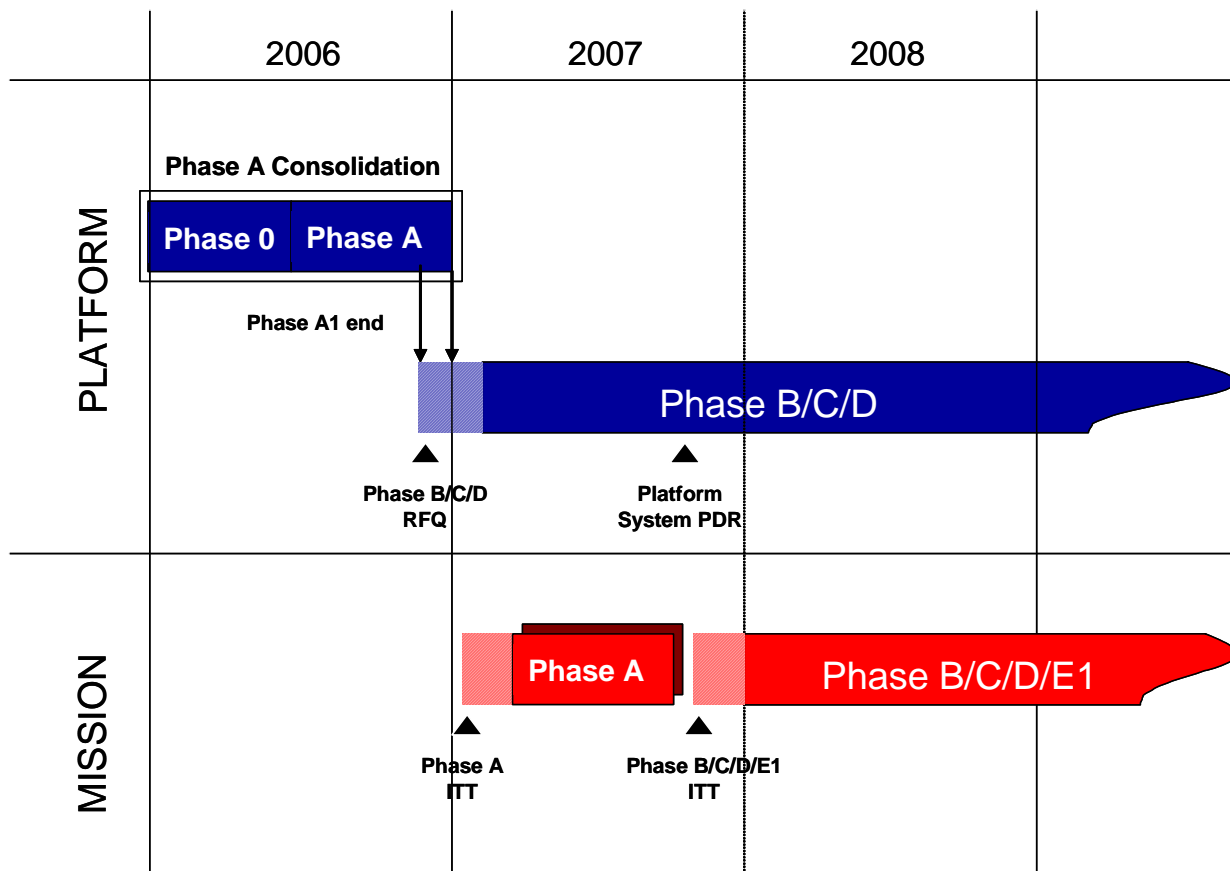
The Programme was approved at the ministerial Council meeting in Berlin in December 2005 and eight of the ESA Member States have currently subscribed namely:

- Germany**
- Sweden**
- Switzerland**
- Luxembourg**
- Austria**
- Finland**
- Denmark**
- Spain**

- **The analysis of the evolution of the satellite telecommunications' demand shows that there is a potential for small satellites in geostationary orbit for telecommunication applications.**
- **In addition, further applications exist (e.g. science, earth observation) that would contribute with additional demand for a standard satellite platform.**
- **No European platform exists that can effectively compete in the market of small telecommunication satellites**
- **A market study was carried out confirming that a market opportunity associated to small geostationary platforms for telecommunication applications existed and was quantified in 3-5 satellites/year accessible to European manufacturers**

- **The Programme Is divided in two elements**
 - **The sub element 1 concerns about the development and first flight model manufacturing of a generic bus.**
 - **The second part [sub element 2] of the Small Geostationary Initiative will focus on the development, manufacturing and launch of a first Satellite mission. This will provide flight heritage and in orbit demonstration for the platform.**

Platform and Mission related schedule



The Small GEO Platform, the contract we are discussing today and currently awarded to OHB, is divided in two main phases:

- The Phase B of a total amount of 13 M€, with the objective of defining the Small GEO platform product line design in all its elements. During this phase OHB and their partners will conduct the subsystem and unit's supplier selection.**
- The Phase C/D of a total amount of 86 M€, will focus on the finalisation of the Small GEO platform product line development and the procurement of a fully qualified Small GEO flight platform.**

Financial scheme

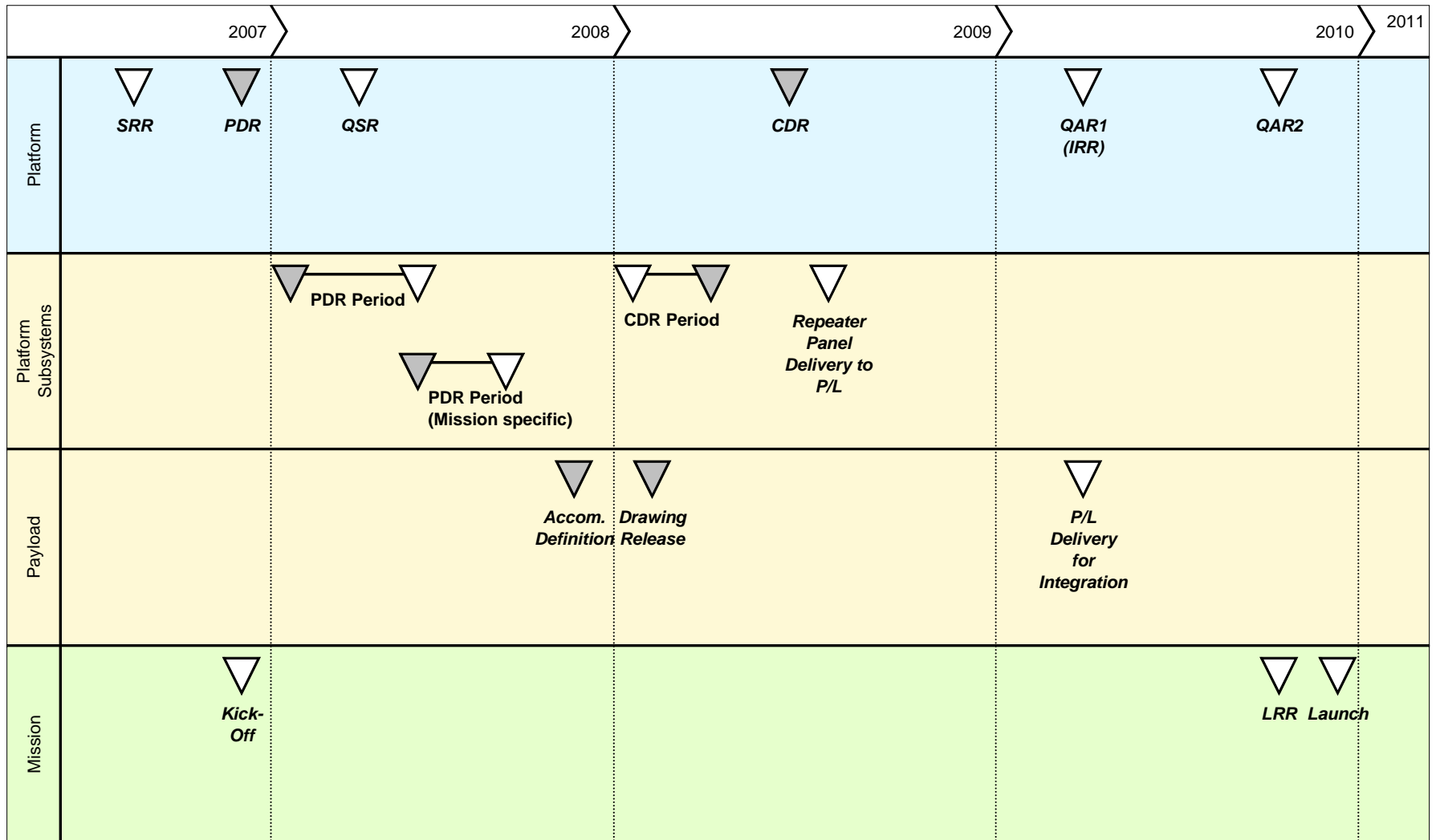
- The phase B is fully funded by ESA
- For what the phase CD is concerned :
 - For the development phase a substantial Industry contribution is foreseen
 - The first platform flight model is funded by ESA and will be used for the construction of the first satellite mission.
 - In addition to the above industry is providing programme support for market analysis, marketing activities and in kind contribution for an amount of 15M € not included in the program cost

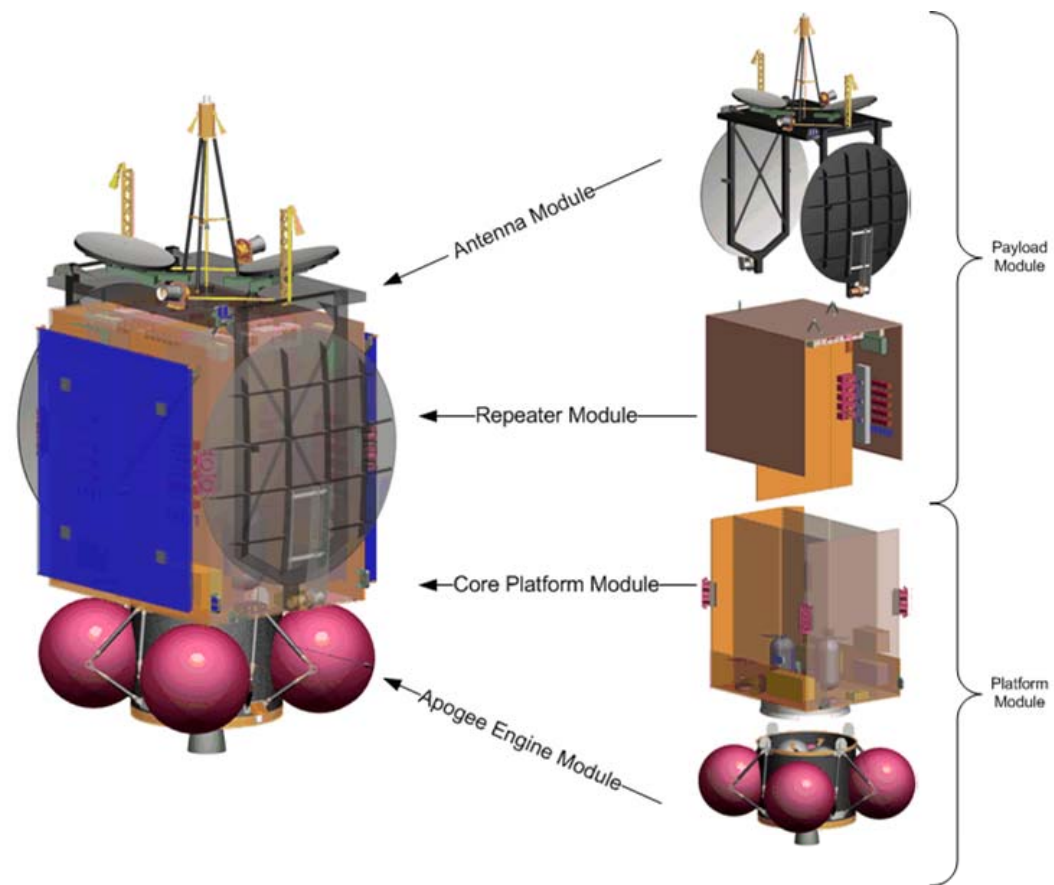
	Phase B	Phase CD development	Phase CD Flight
ESA	13M €	23M €	63M €
Industry	-	15M €	-

Financial scheme

- The phase B is fully funded by ESA
- For what the phase CD is concerned :
 - For the development phase a substantial Industry contribution is foreseen
 - The first platform flight model is funded by ESA and will be used for the construction of the first satellite mission.
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	Phase B	Phase CD development	Phase CD Flight
ESA	100%	60%	100%
Industry	-	40%	-





The SGEO Concept features

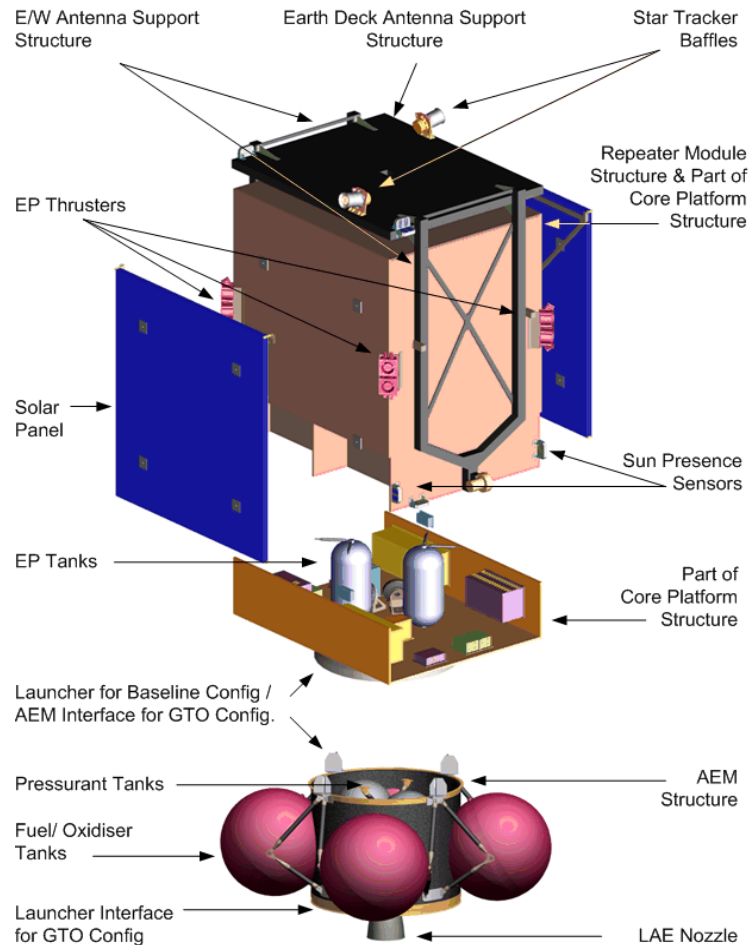
High modularity at system level to allow:

- Flexibility to provide the more cost-efficient Direct Injection, as well as the traditional mass/performance-effective GTO Injection with the modular AEM,
- Easy antenna accommodation using a self-contained Antenna and Earth Deck module
- Self-contained Payload Module and standardized interfaces to allow parallel integration and ease of adaptation

Launch compatibility with all GTO/GEO performing launchers

Compatibility to two European Launchers

Technical Baseline

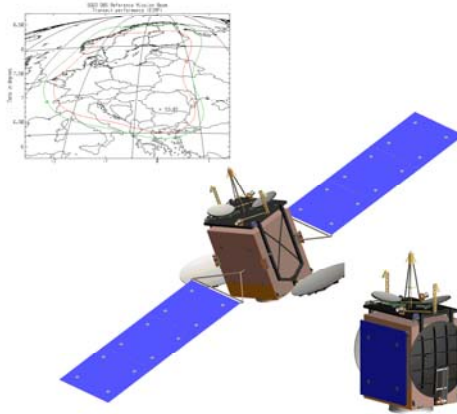


The Platform Concept features

- Modularity on all levels
- Electrical propulsion for Station keeping
- AEM for GTO transfer with bipropellant MMH/MON in mini blow down modus
- Platform dry mass 845 kg (GEO), 1026 kg (GTO).
- 4000 W EOL average power
- Power Bus Regulated $50 V_{dc} \pm 1 V_{dc}$.
- Li-Ion batteries.
- Triple-junction GaAs solar cells.
- LEON II – FT flight processor.
- MIL standard 1553B & optional CAN Bus.
- C-, S-, X- or Ku-band TT&R.

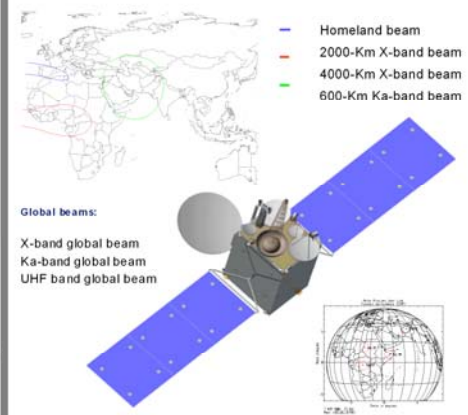
This flexible Platform is expected to provide accommodation to a wide range of application payloads

1) Ku-Band TV broadcast mission

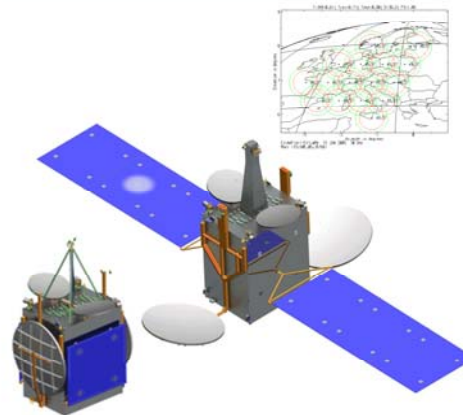


Phase B Reference Mission

2) Hybrid P-/X-/Ka-band Comsat



3) Scalable Multimedia Mission (SMM)



4) Data Relay Satellite

