






TanDEM-X: Phase A Study Summary


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in der Helmholtz-Gemeinschaft

1.Science Team meeting
15-May-2006, Dresden




TanDEM-X Phase A Objectives

Key Questions answered by the Phase A Study

- What is the scientific benefit of a TanDEM-X mission?
- Can we set up a robust mission plan?
- Are all Mission Requirements generated ?
- What is the Performance of TanDEM-X mission?
- Can we safely fly a TanDEM-X formation?
- Can we calibrate the system and determine precisely the baseline?
- Can we synchronize the two radars?
- What are the necessary modifications for the space segment?
- Can we process the data?
- Can we handle the amount of data and products?
- Is there sufficient time for the TanDEM-X mission?

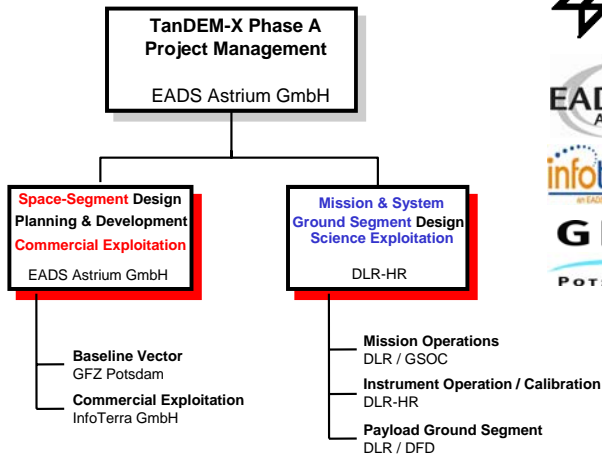
- Can we finance the project?
- What is the commercial benefit of a TanDEM-X mission?
- Is it shown that the project is feasible?



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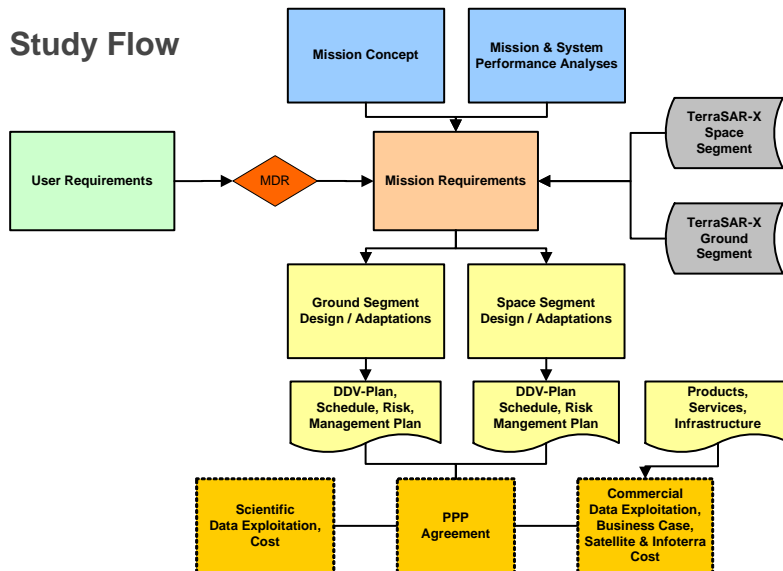
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Phase A Study Team and Responsibilities



Diese Studie wurde im Auftrag des Deutschen Zentrums für Luft- und Raumfahrt e. V. (DLR) im Mittel des Bundesministeriums für Bildung und Forschung erstellt.

Study Flow



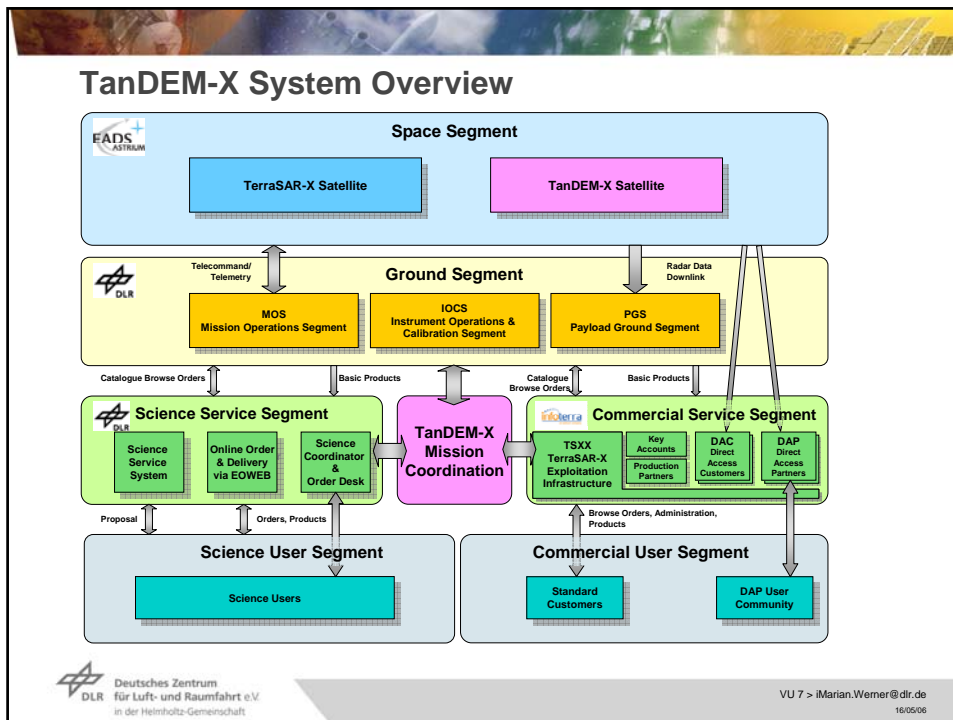
Milestones

- ✓ **Kick-Off: September 13, 2004**
- ✓ **MDR Mission Definition Review: March 1/ 2, 2005**
Review of the URD (User Requirements Document)
- ✓ **Delta Review Cycle of updated URD was necessary**
Final Board Report outlining the excellent status of the document
“excellent basis for the forthcoming work....MDR is finalized successfully”
- ✓ **PRR Preliminary Requirements Review 1. Part: Bonn, June 21, 2005**
Presentation of preliminary design and feasibility
Review of the Mission Requirements Document (MRD), pril.Design documents and plans
- ✓ **PRR RID discussion. Friedrichshafen, August 2-3. 2005**

- ✓ **PRR successfully passed. Phase A finished.**

Documents delivered

- **Mission Description**
 - **User Requirements Document,**
 - **Mission Requirements Document,**
 - **System Requirements**
 - **Space Segment Requirements**
 - **Ground Segment Requirements**
 - **Design Document**
 - **Mission Design**
 - **SAR System Design**
 - **Space Segment & Ground Segment Design**
 - **Development and Implementation Plan**
 - **Risk Analysis**
 - **Management Plan**
 - **Schedule**
- Plus supporting documentation e.g. Performance-, Mission-, Concept Analysis**
- Requested “non-public” documentation:**
- **Cooperation Agreement (harmonized PPP draft)**
 - **Business Case description**
 - **Cost Break-down**



Conclusions

- TanDEM-X has successfully passed the Mission Definition Review (MDR)
- The project has defined well accepted data products
- The project has defined a preliminary reference mission
- TanDEM-X has successfully passed the Preliminary Requirements Review (PRR)
- The project has successfully shown the technical feasibility
- The project has investigated the critical elements
- The project has provided development and cost plans
- All necessary elements for the TanDEM-X mission on the TerraSAR-X satellite have been integrated and tested
- **TanDEM-X has been selected for implementation**