Content

- DLR- an overview
- More data → Much more data
  - Mission of the past - MIR/ PRIRODA
  - TerraSar-X / Tandem-X
  - European space initiatives / ~projects
- Data Management and Long-Term Archiving
- Outlook
DLR- an overview

- Research Institution
  - Aeronautics
  - Space Research and Technology
  - Transport
  - Energy

- Space Agency
- Project Management Agency

- Approx. 8000 employees across 33 institutes and facilities at 16 sites.
More data - Much more data
Mission of the past - MIR/ PRIRODA

- German-Russian project MOMS-2P (Modular Optoelectronic Multispectral Stereo-Scanner) on board of the orbital space station MIR (PRIRODA module)
  - 18m resolution: 4 Multispectral channels, 2 Stereo PAN
  - 6m resolution: 1 Pan nadir
- MOMS-2P images up to a latitude of 51° (e.g. Europe)
- Operation of the camera **1996 to 1999**
- 152 data takes, processing up to L1B,
  - 1 TB of mission data – 4 years
- Duration from ordering till acquisition and delivery:
  - sometimes more than ½ year
- **TerraSAR-X – First German SAR Satellite**

- Launch: 15. Juni 2007
- Orbit: 514 km

- 500 GB per day → 200TB per year

- **Tandem-X**
  - 5TB per day → 1.5PB per year DEM products
More data - Much more data

European space initiatives / ~projects
Giga-, Tera-, PetaByte

A4 page (30x60/12 Pkt.)  
4 KByte

book page (1:1,35)  
5,4 KByte

1 TByte

250 Mill. A4  
25 km high  
1429 CD’s  
213 DVD’s  
185 Mill. Book pages  
370.000 Books (á 500 Sites)

15 PByte (capacity of D-SDA Neustrelitz)

375.000 km ~ Earth-Moon 384.000km
More data - Much more data

Rising

amount of EO space data

diversity of EO space data

Speed of data creation and delivery

Investment (data management, transfer…) despite falling cost per GB
Data Information and Management System

DIMS

EOWEB

User Information Services
(incl. Pickup Point)

Order Management

Online/Offline Product Generation & Delivery

Product Library

Product Library

Production Control

Request Trees

Processing System

Processing System

Post-Processing

Post-Processing

Processing

Processing

Ingestion System

Processing Systems

Ingestion System

Processing

Post-Processing

Processing

Production Control

Request Trees

Operating Tool

Requests

User Information Services

Ingestion System

Processing Systems

Ingestion System

Processing

Post-Processing

Processing

Production Control

Request Trees

Operating Tool

Requests

www.DLR.de  •  Chart 9  •  Kaluga Conference  >  Pollex et al.  >  September 2014
More data - Much more data  
D-SDA Archive Volume
More data - Much more data

D-SDA future

German Satellite Data Archive
Predicted Data Volume

- Sentinel 5p
- Sentinel 3
- Sentinel 1
- TanDEM-X
- TerraSAR-X
- NOAA AVHRR
- Others

Status: 30. June 2014
Long-Term Archiving

Data Management
- Automatic Tape Libraries (robot systems)
- HSM (Hierarchical Storage Management)
- Faster technologies (effective tape drives, SSD)

Reliable Long-Term Archiving
- Quality Monitoring
- parallel use of different (tape) technologies
- active preserving (refreshing, replication, migration, emulation)
- Generation of redundancy information
- Conversion of data formats
How improve usability of data
- more complex view of data as pure readability
- also security, trustability, time series, quality of Data and Meta data

Interaction
- Access to digital information from different sources (research, private companies, public offices, etc.)
- For different users (offices, administrations, citizens, etc.)
- For a variety of use cases (research, government, etc.)
- Extension data access: from file-based to service-oriented

Robust Data-and Information-Infrastructure for an International Research Community