ESA update

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AAS Wernher von Braun Memorial Symposium
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European public space players

18 ESA Member States

27 EU Member States

ESA

ESA Council

Space Council

EU Councils

European Space Policy

national

Space agencies

national

Inter-governmental

National Space programs

ESA Program

ESA/EC co-funded: Galileo, GMES

supranational

EC

FP7, other

space-related activities
ESA Budget - Funding Sources

- EU
- EUMETSAT
- ESA Decided in 2008
- ESA Decided before 2008
- ESA Science & Basic Activities

Years: 2009 to 2018

Funding Sources: EU, EUMETSAT, ESA Decided in 2008, ESA Decided before 2008, ESA Science & Basic Activities

M€:
- EU
- EUMETSAT
- ESA Decided in 2008
- ESA Decided before 2008
- ESA Science & Basic Activities

M€ scale: 0 to 4500
Approved programmes per field of activity

M€


Basic Activities

Science

Launcher

Earth Observation

HSF + Exploration

Telecom

Technology

Navigation
NASA/ESA co-operation in space exploration

**ESA messages:**

- U.S. decisions will have an impact on ESA plans
- ISS = integral part of exploration
  - Credibility for next step + continuity for human spaceflight
  - Now utilisation: science/application + preparation for exploration
  - Success of utilisation has still to be demonstrated
  - Facilitate + review utilisation success
- Two components of exploration: human + robotic
  - Human: ESA depends on other partners
  - Robotic: ESA can take own initiative
- For human exploration: build on solid ISS partnership, but be open for new/additional partners
NASA/ESA co-operation in space exploration

- Lessons from ISS
  - Benefit of redundancy (common space transportation policy?)
  - Standardisation of interfaces
  - Sequence of success milestones needed to sustain public/political support

- Human exploration: Europe needs high level political decision (can be supported by US)
Current status of European ISS programme

Columbus module operational

Test flight of ATV Jules Vernes successfully accomplished

ATV 2 production on the way

ATV 3 production started

European astronaut flights to ISS:
Frank de Winne (Soyuz May-December 2009)

Christer Fuglesang (STS-128 August/Sept 2009)

New ESA astronauts
ATV
Automated Transfer Vehicle

DMS-R
ESA’s Data Management System for the Russian Segment of the ISS. Located in service module Zvezda.

Node 3
Connecting Module

Node 2
Connecting Module

Columbus
(Internal Racks (Biolab, FSL, EPM, EDR), External payloads (EuTEF, SOLAR))

Cupola
Pressurised observation and work area

MSG
Microgravity Science Glovebox

MSL
Materials Science Laboratory

EMCS
European Modular Cultivation System

PFS
Pulmonary Function System

ERA
European Robotic Arm

MELFI
-80°C Freezer for research specimens. Located in Destiny or Kibo

ESA Elements on ISS