Project Overview

Two on-ground EPIC Flight Spare instruments:

- 1 MOS camera at the Leicester University (UK)
- 1 PN camera at the MPE Panter facility of Munich (D)

Both instruments are operated through the same Electrical Ground Support Equipment (EGSE) which was used for AIV tests before satellite integration.
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Both instruments are operated through the same Electrical Ground Support Equipment (EGSE) which was used for AIV tests before satellite integration.

- old hardware, with high risk of irreparable failures
- Test Equipment designed for integration test purposes, unsuitable to use ESA database and command procedures
Status of the EGSE updating with SCOS 2000

Current configuration

- Camera Head
- Electronic Chain
- Power I/F Simulator
- OBDH Simulation Front-end Electronic
- Interface Simulator Unit (ISU)
- Instrument Station (IS)
- Central Check-out Equipment (CCOE)

Connections:
- Power
- OBDH bus
- TC
- TM
- LAN
Status of the EGSE updating with SCOS 2000
Activity proposed by Tony in 2005:

to replace (part of) the current EGSE with an equipment running SCOS 2000, in order to fully reproduce on-ground the on-board status and to operate the FS chains with the same tools used by ESA.
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Main problems

- SCOS 2000 is a *data server*, which has been developed to manage from the ground stations the routine operations of the flying missions

  it is not designed for an EGSE application, and requires a non-standard “ad hoc” installation for the EPIC FS cameras
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- **SCOS 2000** communication protocol is based on TC/TM “frames” instead of packets

  it is necessary to foresee an “adapter” to manage the ISU, in order to convert the SCOS commands into the OBDH protocol
Proposed new configuration

- Camera Head
- Electronic Chain
- Power I/F Simulator
- OBDH Simulation Front-end Electronic
- Interface Simulator Unit (ISU)
- ISU Interface Adapter (ISUIA)
- New S2K-based CCOE (MOC + SOC)
Status of the EGSE updating with SCOS 2000

Project (long) history

2006  Feasibility evaluation

2007  Technical proposal
Agreement between ESA and EPIC PI for task allocation (who does what)
Contract to ex-LABEN (now Thales Alenia Space) for ISUIA development

2008  HW procurement
Development of the ISUIA SW

2009  Failed attempt to install both MOC & SOC S2K SW on a single WS
=> separate installation on two different WSs
S2K training at ESAC

2010  Delivery of S2K WSs to Thales and I/F tests with ISUIA
Successful ISUIA acceptance test (with few pending issues)

2011  SW debugging
Status of the EGSE updating with SCOS 2000
### Status of the EGSE updating with SCOS 2000

#### ISUIA Local Data Manager

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N. La Palombara - INAF/IASF-Milano

XMM - EPIC Operation Meeting

Mallorca, 29 March 2011
**Status of the EGSE updating with SCOS 2000**

### SCOS-2000 Command History

- **W/S:** xsocm
- **S/C:** XMM

#### Command History Query Display: FU085

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**General**

- **S/C ID:** 193
- **G/S Name:** COMMAND
- **Request Size:** 256
- **Service Mode:** PACKET
- **VC ID:** 0
- **Frame Type:** REQUEST
- **Request ID:** 3

**Raw Data**

```
0000: 1f00 c003 0005 3955 0100 9a08
```
Status of the EGSE updating with SCOS 2000
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Next steps

• closure of open SW issues
• ISUIA delivery to LUX and end-to-end tests with the MOS camera
• ISUIA and S2K WSs delivery to PANTER facility and end-to-end tests with the PN camera
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Open matters

• health status of the FS instruments: are they still working…? (possible damage of the PN Camera Head)
• availability of the FS instruments: are they ready for tests…?
• test planning (when? what?)