



# **MIR**

# **Status Report**

EJSM Workshop

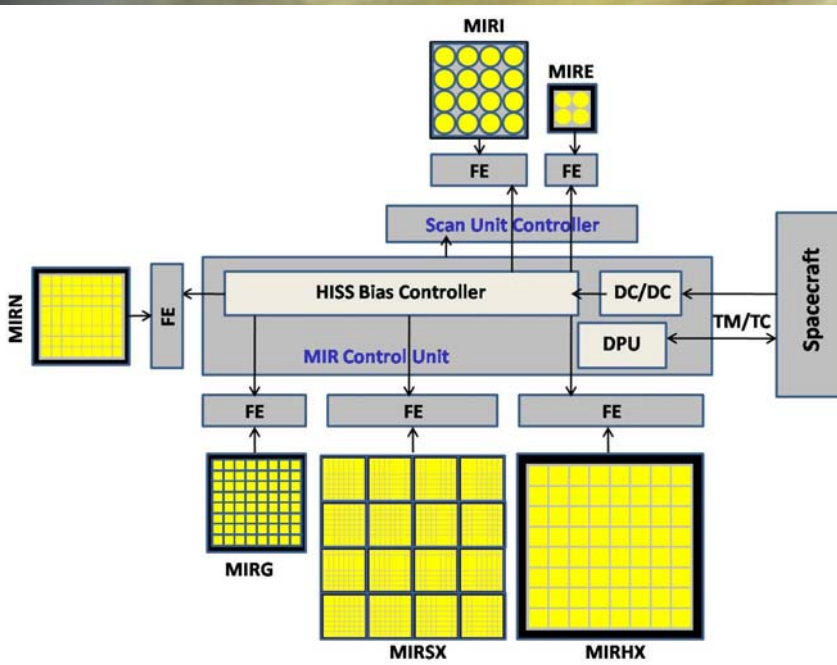
ESTEC – 2010 January 18

Leonid Gurvits on behalf of MIR Team

# MIR Science Goal

- To perform comparative characterization of the surface composition of the Galilean moons such as e.g.
  - Determination of the fraction of ice/non-ice composition over the subsurface of each moon
  - Determination of the content and distribution of soil constituting elements of the non-ice fraction in the shallow subsurface
- To characterize the radiation environment of the Jovian magnetosphere including in the vicinity of the Galilean moons such as e.g.
  - Determination of the distribution of high energy protons, neutrons and ions inside the Jovian magnetosphere along the cruise phase of the EJSM spacecraft and in the orbits around Ganymede and Europa
- **Heritage of HEND (Mars), LEND (Moon) and MGNS (BepiColombo)**

# Multi Instrument Radiometry



Sensor	Measurement Type	Energy Band
MIRE	electrons	1 keV- 1 MeV*
MIRI	Protons & ions	10 keV-10 MeV
MIRN	Neutrons	0.01 eV-5 eV
MIRHX	Hard X-rays	5-150 keV
MIRSX	Soft X-rays	0.5 keV-10 keV*
MIRG	Gamma-Rays	100 keV-10 MeV

# MIR Meeting Reports

- **MIR Team Meetings #3 & #4:**
  - **Nov 2009 @ DLR Bremen:**
    - **Radiation Assessment and Mitigation**
    - **Sensor design for JGO**
    - **Engineering interface of sensors and instrument control units**
  - **Dec 2009 @ Pasadena:**
    - **Radiation Assessment and Mitigation**
    - **Sensor design for JEO.**

# Assessment Study Status Report

- **Securing national funding in Russia (PI), Germany, USA and the Netherlands underway; positive outlook**
- **Sensor process routes:**
  - Ongoing identification of industrial partners and areas where significant technology development may be required along with overall schedule and costs
- **Prepare technical notes of each sensor design for feasibility review by industry.**
  - ASIC's and a common ASIC development approach will be implemented