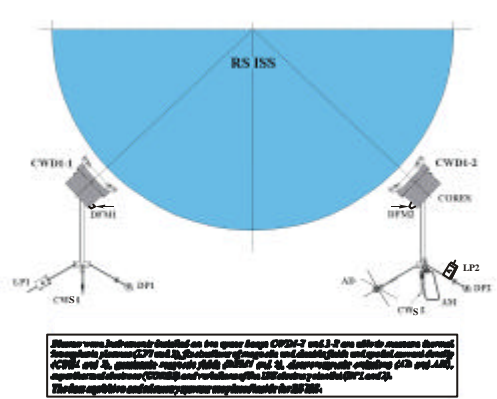


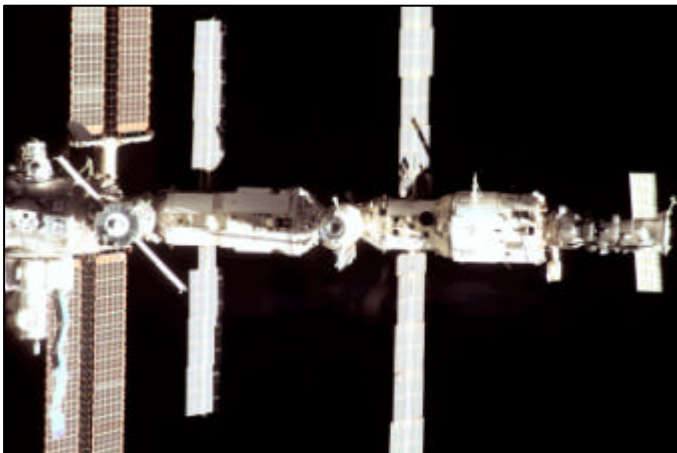
The Plasma-Wave Complex of scientific instrumentation for wave and plasma parameters measurements in the frame of Russian Segment of ISS
 "OBSTANOVKA 1-stage"



ESA Space Weather Workshop 3-5 November 2003, ESTEC, Noordwijk

Unit	PWC composition	Responsible Institute
Combined wave sensor – CWS-1, CWS-2		LC ISR, Ukraine
Flux gate magnetometer – DFM-1		IKI RAS, Russia
Flux gate magnetometer – DFM-2		LC ISR, Ukraine
Langmuir probe - LP-1, LP-2		STIL, Bulgaria
Spacecraft potential monitor - DP-1, DP-2		IKI BAS, Bulgaria
Plasma discharge stimulator – SPP		IKI RAS, Russia
Correlating Electron Spectrograph (10eV – 10KeV)	CORES	Sussex University, UK
Radio Frequency Analyzer – RFA (Scorpion)		SISP, Sweden ; SRC, Poland
Signal Analyzer and Sampler – SAS3		SRG, BLE, Hungary
Data Acquisition and Control Unit - DACU-1, DACU-1		KFKI RMKI, Hungary
Block of Storage of Telemetry Information – BSTM		Sheffield University, UK
		KFKI RMKI, Hungary
		Sheffield University, UK
Grounding support equipment – GSE		KFKI RMKI, Hungary
		SRC, Poland

ESA Space Weather Workshop 3-5 November 2003, ESTEC, Noordwijk



Russian Segment of the ISS

ESA Space Weather Workshop 3-5 November 2003, ESTEC, Noordwijk

The realization of electromagnetic monitoring on board the *Russian Segment of International Space Station* needs both the working out of

- the observation methodology,
- the design of corresponding experimental equipment.

ESA Space Weather Workshop 3-5 November 2003, ESTEC, Noordwijk

The “OBSTANOVKA 1 stage” will be carried out to provide a databank of electromagnetic fields and of plasma-wave processes occurring in the ISS near-surface zone (NSZ) to study the plasma component factors of near-Earth space (NES).

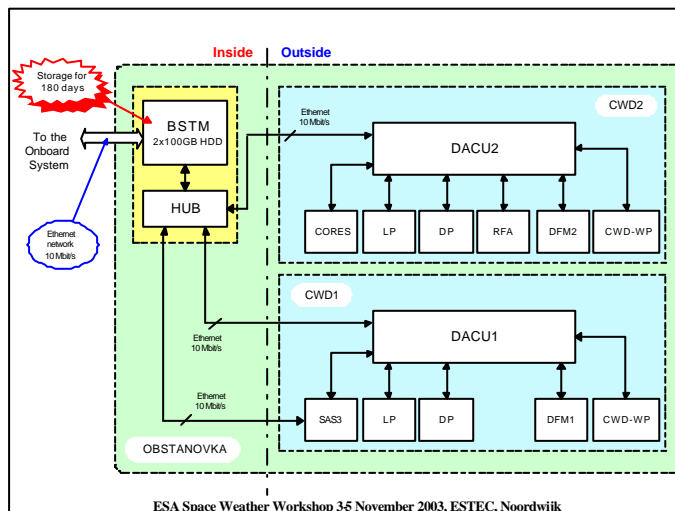
The results will be used in the field of applied geophysics, ecology, space weather monitoring, and also for the updating of operational requirements used in space engineering and technology.

ESA Space Weather Workshop 3-5 November 2003, ESTEC, Noordwijk

The PWC scientific equipment is designed to measure in NES the following physical parameters:

- current parameters of thermal plasma (in two points):
 - electrons temperature, $T_e - 1000 - 6000 \text{ K}$
 - electrons and ions density, $N_e, N_i - 1 \cdot 10^9 - 1 \cdot 10^{13} \text{ m}^{-3}$
- current electromagnetic parameters (in two points):
 - DC electric and magnetic fields and currents;
 - AC electric and magnetic fields and currents;
 - spectra of ELF-VLF-HF electromagnetic fluctuations.
- current plasma potential and ISS potential $0 - 200 \text{ V}$;
- electrons spectra with energy range $0,01 - 10 \text{ keV}$ and oscillations HF: $0 - 10^7$; VLF: $0 - 10^4$; ELF: $0 - 150$;

ESA Space Weather Workshop 3-5 November 2003, ESTEC, Noordwijk



ESA Space Weather Workshop 3-5 November 2003, ESTEC, Noordwijk

The results of the “OBSTANOVKA 1 stage” experiment (beginning of the realization 2005) are common for all participants. The continuous operation in ionosphere within not less than 5 years is planned.

ESA Space Weather Workshop 3-5 November 2003, ESTEC, Noordwijk