

8. PARTICIPATION ON THE ITER PROJECT

The participation of the Association EURATOM/IST on the ITER project will have two research lines, where the following activities are foreseen:

- *Microwave reflectometry*
- Demonstration of new applications of reflectometry as required for ITER, namely fast evaluation of density profiles using a neural network approach;
- Finalization of the participation as the leading Association of EFDA TaskTW3-TPDSUP, on the design analysis of the position reflectometer system for ITER, including:
 - Co-ordination of the activities, within the EU Fusion Associations participating in this task;
 - Provide input to the drawing-up of a plan for full development of the plasma-position reflectometer system for ITER, including detailed specifications for future design tasks on the system and R&D tasks on critical components;
 - Assess existing documentation and assist the ITER IT in the updating of ITER documentation in this area.
- Participation as leading Association (a proposal has been presented) in the EFDA EU/RF collaborative Task TW5-TPDS-DIARFA, Experimental Assessment of ITER HFS Waveguides, including:
 - Experimental characterization of the full mock-up HFS in the counterpart RF laboratory;
 - Characterize experimentally the critical components. Provide the infrastructure for the experimental testing;
 - Contribute to the analysis of the experimental results, the subsequent optimization of the waveguide design, and definition of future design and R&D activities on HFS waveguide technology, manufacture, ITER-installation and testing. Support the interpretation of the experimental work with numerical waveguide and full-wave plasma simulations;
 - Exchange expertise on using reflectometry for density-profile measurements, collaborating on such measurements on an EU plasma device and on the T-10 tokamak;
 - Provide technical advice on the progress and execution of the RF contribution for the purpose of contract monitoring;
 - Participate in the experimental characterization of the full mock-up in the counterpart RF laboratory.
- *Control and data acquisition*
- Participation on the Group nominated for the assesement of the ITER control and data acquisition system;