**WG E2**

Current and possible future diagnostics enhancements have been discussed in the working group E2. Five talks about the status of the current projects were given by the leaders or representatives (Thomson Scattering, VUV divertor spectroscopy, Fast Ion Losses, Phase Contrast Imaging, Doppler Reflectometry). One talk was given by the Enhancement area coordinator discussing the lines for future diagnostics upgrades.

Main technical points coming out:

TS. Well into the procurement phase of the main parts of the system, including optical fibers, polychromators and detectors, in vessel collection optics for the Edge TS, supporting mechanics and laser source. Sensitivity of the edge systems for pedestal measurements has been discussed with updated scenario simulations.

VUV. Solutions for the spectrometer and for the collection optics have been presented. Some delay in the start of the procurements of some parts, not critically impacting on the timeline. The system will be assembled at ENEA Frascati for test and characterization.

FILD. Mechanical design well progressing towards the procurement for all the main parts. Assessment of the thermal load underway. Detector side already developed.

PCI. Modelling of the expected performances in JT-60SA conditions well advanced. Diagnostics layout broadly defined and hardware specifications underway to provide the cost assessment. Awaiting finalization of the tokamak hall layout to define the details.

DR. Simulations of the performances for core and pedestal measurements were presented, coherently with a likely line of sight in the equatorial port. A viable design for the V/W band has been found. Relevant difference in achievable performances depending on how much port space can be used, a single 200mm port plug or a good part of the lower third of the port.