

## **Evaluations of Next generation DSP solutions**

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As an introduction for the second session, this presentation will explain the works performed at Astrium central engineering data processing advanced studies on the track toward efficient answers to required powerful processing for future payloads. The issue of onboard very high processing performance which is required for future Payload Data Handling Systems is not solved today and no clear roadmap appears. Several solutions have been evaluated through exploratory studies in particular from the perspective of their performance with respect to the P/L data processing requirements, SW suitability, associated tools and overall maturity. Moreover, high performance data processing devices for spacecraft payloads should also take into account technology harmonisation objectives in order to increase reuse capability and overall industrial efficiency. This raises additional architectural concerns and evaluation criteria to be taken into account. The summary of the obtained results will be presented for the following exploratory studies:

- Dual core solution associating a General purpose processor and a DSP (Diopsys)
- Symmetrical Multiprocessor architecture (prototype with Leon3)
- COTS based solutions
- Specialized co-processor

A synthesis of the main outcomes and perspectives of these studies, evaluations and prototyping activities will be presented as well as tentative recommendations for future developments as background material for the round-table.