AGGA4 (Advanced GPS/Glonass and Galileo ASIC)

Prime Contractor: Airbus DS (Germany)
Presenter: Isaac Tejerina / Uwe Hoch
ESA TO: Josep Rosello

Abstract:

Airbus DS (Germany) has developed the AGGA4 device under an ESTEC contract in order to support the Earth observation applications (e.g. MetOp Second Generation) requiring GNSS navigation signals. The AGGA4 device enables continuous on-board availability of Position, Velocity and Time (PVT) solutions at very high accuracy, with small hardware mass and power budgets. The device will be made available as a Standard Product from Atmel.

The device is manufactured using Atmel's ATC18RHA technology at the UMC foundry; is based on a Leon2 FT processor and consists of 36 single-frequency GNSS channels and various interfaces (viz. SpW, Mil-Std-1553, SPI, etc.). Airbus has encountered many challenges and consequently many lessons-learnt during the development of this complex device. These included timing issues in the ASIC libraries, wrong FPU IP, etc. leading to a re-spin of the device. Additionally, another major risk during the project was the change of foundry from L-foundry to UMC between the two manufacturing runs.