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AN OVERVIEW OF ON-GOING SATELLITE TECHNOLOGY TRANSFER PROGRAMS AT BERLIN
SPACE TECHNOLOGIES

Abstract

The technology transfer program of Berlin Space Technologies (BST) can be implemented at various levels:

- Level 0 is the procurement of a turnkey satellite and being trained in operating it.
- Level 1 training enables the customer to participate in satellite manufacturing in BST's labs.
- Level 2 training enables the customer in designing and building a satellite system in their own labs while procuring the subsystems externally.
- Level 3 training enables the customer to design and build key satellite subsystems on top of the whole satellite system.

BST is currently involved in three programs spanning all levels: The Lagari mission is a turnkey satellite solution for Earth observation. It represents a Level 0 program.

NExSat marks the first micro-satellite integrated locally in Egypt. In 2015 the Egyptian Space program chose to work with BST in a dedicated capacity building program. In 2020 the Egyptian Space Agency (EgSA) took over the responsibility of the NExSat project. BST has built or procured the platform and payload subsystems and assembled them for functional system testing. The final satellite integration is done in Egypt by a local team of experts supported by BST staff. Thus, the satellite forms the key element of the Level 2 capacity building program between Egypt and BST. While the satellite is itself experimental in terms of mission objectives, it represents the first satellite in a series that will enable Egypt to successively build up local expertise for satellite mission owner capabilities.

The Azista BST Aerospace First Runner (AFR) mission marks the beginning of satellite and subsystem serial manufacturing in India. It thus represents a Level 3 program. AFR is based on BST's LEOS-50 satellite bus. The training program is implemented through a joint venture between BST and local company Azista Industries. A particular challenge to training the local factory team in building and testing the BST technology was imposed by the COVID-19 pandemic. During critical times both Germany and India were severely impacted, making it impossible to plan in-person training by the German team in India. Consequently, a remote-training environment was set up that enabled official opening of the factory by March 2022.