

SMALL SATELLITE MISSIONS SYMPOSIUM (B4)

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STUDY ON THE SUCCESS OF SMALL SATELLITE TTP PROGRAMS FOR DEVELOPING COUNTRIES AND BEST PRACTICE BASED ON TUBSAT TRAINING PROGRAMME

Abstract

Building a sustainable small satellite program on its own can be both time consuming and costly. Therefore most developing countries interested in Small Satellites search for an experienced partner to develop their programme. During the last twenty years many countries have been participating in TTPs from the leading small satellite providers but only a limited number of those countries have actually achieved a sustainable program yet.

In contrast to other programs the TUBSAT Training Program originated at Technische Universität Berlin (TUB) has been remarkably successful. All of its partnering agencies (DLR, Morocco Space Agency, Indonesian Space Agency) have active small satellite programs and independently build small satellites based on the TUBSAT heritage. In order to understand the difference to other TTP programs TUB has done a study to analyse to identify areas of improvement and document best practise.

In the study a number of conflicting goals for the training program could be identified. It is the understanding of the authors that those conflicts hamper the succes of the TTP mission. To improve the success rate of satellite training programs it is in the interest of both customers and providers to better understand and eventually avoid those conflicts.

The questions faced by the authors were:

Why is TUBSAT Training so successful although it is a less complex and less costly program? Or is this simplicety the key to success. Why does TUBSAT achieve better technical parameters in key-systems than satellites that are twice its size? How does the TUBSAT design philosophy help to achieve this goal? What are the stakeholders for small satellite missions in developing countries? How to balance their different interest like mission performance (science team) vs. repeatability (engineering team). Why is the staged (multi mission) approach of TUBSAT more successful and more sustainable than the one giant leap“ approach of the competitors.

The authors have analysed the results of the major TTP programs and interviewed previous participants. The results of the study will be presented in detail in the full paper.

One result of the study has already been implementet at TUB: in the past TUBSAT the university acted as main contractor. In order to offer more credibility, flexibility and customer convenience a dedicated Spin-Off was founded by senior staff of TUB. The Berlin Space Technologies (BST) act as a one stop agent for the TUBSAT Training program and will implement it in cooperation with TUB.