

Qualification of Suppliers of Space Application Equipments – The Experience with Space Solar Panels

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ABSTRACT

In the past few decades, satellite services have had an ever increasing participation in the daily life of contemporary societies. Concurrently, the market for space hardware has steadily expanded and by now the manufacturing and commercialization of space satellites have established themselves as an important economical activity in many countries, assuming a visible position in the so-called aerospace industry.

A significant step towards the development of a national space industry in Brazil was given at the end of the 70's, with the establishment of a governmental program, named *Missão Espacial Completa Brasileira (MECB)*, aimed at the acquisition and development of space technology through the manufacturing of four satellites and the respective launchers. A milestone of the program was the successful launching last year of the first brazilian-made satellite, the *Satélite de Coleta de Dados 1 (SCD1)*. The SCD1 is a small data collecting satellite and up to now has been fully operational. A second satellite (SCD2) is by now in an advanced stage of manufacturing and has its qualification tests scheduled for next year.

One of the natural objectives of the MECB program has been the qualification of brazilian industries as suppliers of space qualified equipments and components. The Instituto Nacional de Pesquisas Espaciais (INPE), which is in charge of the satellite sub-program of MECB, has accumulated a great deal of experience in this area. Owing to a multitude of factors, mainly of a technological character such as availability of technological information, technological profile of brazilian industries, etc..., the strategies of industrial policy put forward by INPE have

wildly varied from one hardware item to another, with varying results. A particular approach was followed in the qualification of a national supplier of space solar panels. By many standards, this qualification program has been considered very successful, a judgement which is reinforced by the fact that the solar panels of the SCD2 satellite have already been fully manufactured in Brazil, at a competitive price.

It is our objective in this paper to give an account of the strategy followed in the aforementioned qualification program, discussing in detail its several phases and also their practical implementation. We conclude the paper with a brief discussion of the cost-effectiveness of the overall qualification program.