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EDITORIAL

The Creation of a National Space Systems Integrator

João Paulo Rodrigues Campos¹

Eleven companies took part in the international tender that lead to the selection of the satellite supplier for the Defense and Strategic Communications Geostationary Satellite System (SGDC). All of them shared the same traits: financial power with billion-dollar-plus revenues, wide range of technical skills and long tradition in leading defense or aerospace projects as prime contractors in their home countries. The international satellite market nowadays is dominated by large satellite integrators that have the strength and skills (not to mention government support) to survive in such a competitive environment.

There has been a long debate in Brazil about the need to build a national satellite integrator. Historically, this role has been fulfilled by Instituto Nacional de Pesquisas Espaciais (INPE), which has played a key role in developing early space technology capabilities in the country with successful programs such as the SCD or the CBERS series. These programs also sowed the seeds of a technically capable space industry, with good understanding of most space subsystem technologies, eager for opportunities to transition from an embryonic stage towards its maturity. The establishment of a national satellite integrator may well have a catalytic effect in this process.

According to this new model, public research institutes would focus on leading edge technology development, with its inherent high risk, whereas the industrial integrator would help bringing these technologies into the market in a more efficient, cost effective way once they get mature. The success bred by these programs, fulfilling their mission on schedule

and on cost, would attract more investments, which, in turn, would benefit the whole chain.

Indeed, the National Space Activities Plan (PNAE) and the National Innovation, Science and Technology Strategy published by the Brazilian Space Agency (AEB) and the Ministry of Science, Technology and Innovation (MCTI), respectively, established as a priority for public policy to nurture the creation of such company as a way to develop a healthy space sector in Brazil, an idea that was quickly embraced by the industry and other government entities.

The SGDC program was a perfect opportunity to make this happen. Telebras, the entity chosen by the government to lead the National Broadband Program (PNBL) infrastructure deployment and the owner of the SGDC system, would welcome support to run a program with such complexity and Embraer was the perfect partner for the venture, given its capabilities, track record and the similarities between the aeronautical and the space sectors in terms of technologies and business processes. Actually, most of the spill-overs from the space sector go into the aeronautic and defense industry, which demonstrates the resemblances between those two sectors.

Visiona Space Technology was created to act as the prime contractor and manage the SGDC program as a joint-venture between Telebras and Embraer, merging space-specific technical knowledge from senior INPE engineers, among the most experienced ones in satellite integration in Brazil, with Embraer proven technical and management practices. A Technology Absorption program, set up as part of the SGDC

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project, will help the consolidation of the company technical expertise. The results so far have been very encouraging with the first phase of the SGDC project being completed flawlessly in a “record lap” time and cost. Holding a significant participation in the company capital, the government has made sure at Visiona’s creation that it would have the means to exert strategic influence over the company’s decisions.

The government also established technology transfer requirements for the SGDC program. Led by the Brazilian Space Agency, the SGDC Technology Transfer Program will enable the Brazilian space industry to hold a larger share in future Brazilian geostationary programs and possibly even to claim a place in the international market.

Taking a broader perspective, many studies have been performed in OECD countries on the return on investment in space programs from which two conclusions can be drawn: (1) investment in space pays off. Being on the edge of technology,

the space sector is a powerful source of innovation through its spill-overs. Also, space-based infrastructure such as navigation, imaging or telecommunication systems have the ability to leverage productivity across the economy; and (2) the actual return of investments in space technologies varies substantially among different countries depending on how the sector is structured in that particular country.

The new model made possible in Brazil by the SGDC program, being spearheaded by Visiona, is poised to improve local space programs effectiveness. Renewed confidence from policy makers on the sector ability to deliver on its promises is a key to assure a continuous flow of resources, benefiting all players — academia, research institutes and industry. These players working as a team to deliver programs with high socio-economical return are the key for a sustainable Brazilian space sector. We are in the right direction!