**Fives Solios** is a customer-oriented organization fully committed to the development of innovative solutions. The new Chief Executive Officer of Fives Solios, Daniel Brunelli-Brondex, answers three questions to explain it.

**Fives Solios is made up of four companies:**
- two are located in France, one in England, one in Canada, and four services subsidiaries.

**How can Fives Solios customers benefit from this organization?**
Fives Solios is able to fulfill its customers’ requirements thanks to an increasing product range and a strong geographical presence on four continents. The Solios group was created in 2003 and is based on three centers of excellence:
- Carbon, Gas Treatment and Casthouse.

The organization and the technologies available allow us to provide our customers with reliable solutions and adequate support to meet their growth strategies, such as the large increase of smelter capacity.
Furthermore, our permanent establishments are aiming to get closer to our main customers. Our Montreal office is close to Alcoa and RTA as well as the main engineering companies [SNC Lavalin, Bechtel, Hatch].

In the last ten years, Fives Solios has set up Service subsidiaries, such as Solios Services Al-Ali in Bahrain to serve our Middle East customers, Solios Services Southern Africa, Solios Vostok in Russia and Solios Services in China. These entities develop a long-term partnership with our customers and provide them after-sales services and on-going local assistance.

**How did Fives Solios adapt to accompany its customers during their development worldwide and their continuous research of innovation?**
Historically, the French companies used to accompany Aluminium Pechiney in its development. From the beginning of the eighties, the set-up of a subsidiary in Montreal was aimed at supporting the growth of primary aluminium production in North America. Later, each company gradually diversified its assistance towards all major aluminium producers. In order to meet our clients’ new requirements, Fives Solios has developed key competences in terms of project management, site supervision and knowledge management of a large panel of local subcontractors.

In addition, Fives Solios belongs to a large international group, Fives, which sustains our development with financial and institutional back-up. This support endows our customers with additional benefits when they involve larger and evermore sophisticated projects, which amount to several billions of dollars.

**What does Fives Solios propose to answer to these largest smelters’ needs and constraints?**
Proposing innovative technologies and developing proprietary knowledge have always been Fives Solios’ strong points. Innovation efforts are directed to meet our clients’ expectations in terms of performance, capital cost and respect for the environment. Fives Solios invests continuously in R&D programs and has developed technologies such as Xelios, the latest generation of vibro-compactors, to improve anode quality despite a substantial decrease in raw material quality. Our gas and fume treatment centers also benefit from this continuous research policy: for example, our state-of-the-art gas treatment centers combined with the addition of Ypriso double pot suction technology has allowed in recent years a 30% reduction in the smelters’ total fluoride emission at the lowest operating cost. These results have been obtained despite the fact that pot emissions doubled in the last 20 years with the advent of high amperage pots operated with acodic electrolytic bath.
Moreover, to accompany our customers in their constant evolution, Fives Solios sets up R&D co-development agreements with technological leaders to ensure that we tailor our innovation towards their present and future needs. Lastly, in order to meet the market requirements, we have greatly diversified our fabrication locations. In 2011, thanks to our engineering subsidiary in Chennai and Shanghai, we manufacture and export more equipment from India and China, while optimizing construction and local contents where the new smelters are built.

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The primary aluminium market rebounded in 2010 both in terms of production and market prices. Encouraged by an optimistic aluminium outlook, capacity restart and new investments should be sustained at reasonable levels in 2011 and beyond. However the driving force behind the growth of the aluminium industry comes mainly from the developing regions of China, India and Middle East, with some opportunities in regions with abundant water resources such as Canada or Russia. In 2010, Fives Solios pursued its development in India through contracts with Vedanta and Hindalco, whilst extended its collaboration with some existing customers by getting orders from Chalco, Sohar Aluminium, RTA, Alouette and Aluar. Most notably, Fives Solios consolidated its position as a worldwide leader in the primary aluminium market. The group represented a new high for Fives Solios in terms of orders intake, thanks to the only large scale commitment outside of China, implemented by the newly formed JV between Ma’aden and Alcoa in the Kingdom of Saudi Arabia. Fives Solios companies were awarded four significant orders in our main fields of expertise: 2010 constituted also a milestone with the completion and ramp-up of all our facilities at Qatalum and Emirates smelters. Fives Solios strives constantly to better serve the primary aluminium producers by proposing innovative and cost effective solutions suited to fulfill the needs of our customers. Research and Development, Corporate Social Responsibility and sustainability remain an essential part of our business mandate. Fives Solios remains your partner for designing today the plants of the future.
A new Xelios in China

In May 2010, Fives Solios obtained a contract from Chalco Liancheng for a Xelios vibrocompacting machine, to be installed at their new aluminium smelter located next to the existing plant, in China.

The production capacity of this brownfield smelter will reach 380,000 tpy of aluminium, based on SAMI technology operating at 340 kA. This twin table machine will enable the production of large-sized anodes in order to meet customers’ requirements.

In 2010, India remains an important market

Following a successful year in 2009 in India, Fives Solios has pursued its breakthrough into the Indian market, by obtaining two contracts for Firing & Control Systems for both Vedanta at their Balco Aluminium plants in Korba and Hindalco at their Mahan and Aditya smelters.

These projects will be implemented through a consortium made up of Fives Solios and the Fives Engineering subsidiary in India. A large part of the equipment will be manufactured by Fives India, which will also be responsible for the final ramp assembly on site. The Hindalco contract will implement control system with safety PLCs using Wifi communication, and will include CO modules for combustion monitoring, a technology specially developed by Fives Solios.

Sohar Aluminium renews its confidence in Fives Solios

As part of the amperage increase of their electrolysis pots, Sohar Aluminium wants to improve the processing capacity of the two existing Gas Treatment Centers (GTCs) supplied by Fives Solios. In December 2010, Fives Solios was awarded a contract for a water spraying system into the ducts upstream of the GTCs, in addition to air dilution, for better efficiency of gas cooling.

This system, from RTA technology, represents an alternative solution to cool down the gases at the Centers’ inlets, in order to allow the smelters to boost their potline amperage, and particularly for smelters of high capacity in the Gulf region, where ambient temperatures are very high during summer months.

Ozeos, the new generation of filters for the AP60 technology

In October 2010, Rio Tinto Alcan awarded Fives Solios with a turnkey contract for one Gas Treatment Center (GTC) to treat the gases coming from their pilot reduction line of 38 pots based on RTA newest AP60 technology, located in Jonquiere, Quebec.

The project consists of the design, supply, installation, commissioning and start-up of a GTC fitted with 5 Ozeos filters.

Ozeos is the most advanced innovative dry-scrubbing solution for high amperage modern smelters. It is the latest technology developed by Fives Solios to improve the efficiency of the gas dry scrubbing and to reduce the GTC footprint.

Improvement of the environment at Aluar

At the beginning of 2010, Fives Solios was selected by Aluar to upgrade the pitch vapor collecting systems for both anode production lines at their Puerto Madryn smelter in Argentina. This contract includes the supply of an RTO (Regenerative Thermal Oxidizer), specifically dedicated to the solid pitch melter and the liquid pitch tank. It also covers the improvement of the layout of the whole pitch vapor collecting ducts as well as the increase of the processing flow.