



A New Era in Kourou

– Industry Gets Ready for Vega and Soyuz

Kourou has been in the doldrums. With the current slump in satellite launch clients, local space industry has shifted into a lower gear for the time being – but around the corner the grass should be greener. The industrial contractors at the Centre Spatial Guyanais (CSG) are preparing to welcome Vega and Soyuz, which will boost the competitiveness of Europe's Spaceport.....

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"Politicians are the strategists and we the tacticians", says Jean-François Dairon, Alcatel Space's representative in French Guiana. His company has been among Kourou's pioneers when exploiting ELA 1, the launch zone dedicated to the first versions of Ariane, and has been adapting to the high and low tides of Europe's space endeavours over the last decades. While twelve Ariane launchers departed from Kourou in 2003, there were only four lift-offs last year. Currently, Europe's Spaceport is experiencing the sharp downturn in the global market, exacerbated by the resulting cut-throat pricing in the launcher sector, which is also causing major problems for Ariane's competitors.

Taking note of this downward trend, Europe's Ministers responsible for space affairs reacted quickly. At the ESA Council Meeting at Ministerial Level in May 2003, they committed the financial resources needed to qualify the Ariane-5 ECA launcher and to kick-off an ambitious programme sustaining Europe's Guaranteed Access to Space (EGAS). Moreover, they

encouraged the reorganisation of the European launcher sector and gave the green light for launching Soyuz from CSG and to the starting of ESA's Future Launchers Preparatory Programme (FLPP). The legal and financial basis required to consolidate Europe's launcher sector was thereby laid.

Since then, Kourou has been given a new dynamism as it prepares for the creation of a fleet of launchers. In addition to Soyuz, there will be ESA's new small launcher Vega to complement Ariane-5, the three vehicles together providing Arianespace with the utmost degree of flexibility. Europe's Spaceport will therefore soon be offering launch services for all sizes of payloads, for all types of missions, to any kind of destination and, most importantly, with an attractive pricing structure. *"We wait impatiently for Vega and Soyuz"*, stresses Claude Lugand, head of the local office of the company Clemessy, because he knows that in the meantime stream-lining is on the agenda.



A Motor of Kourou's Past, Present and Future

When in 2001 the French national space agency CNES changed its contractual relations with its service providers on-site, the industrial contractors present at the launch base gained significant responsibilities. Still, industrial representatives expect the forthcoming reorganisation of CSG to transfer even more responsibilities to industry in order to provide it with room for manoeuvre to manage the demand for additional cost reduction.

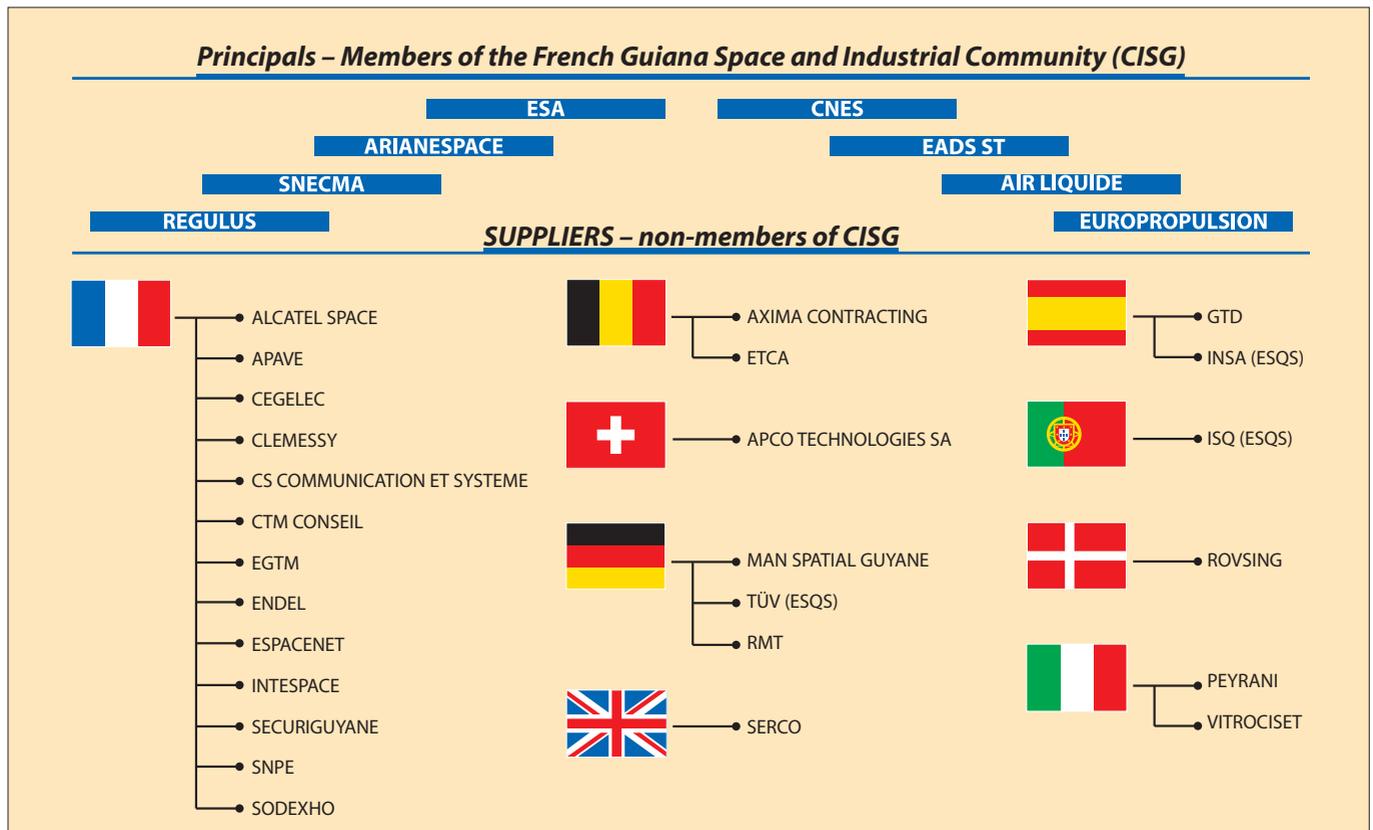
The arrival of Vega and Soyuz coincides with the organisational redefinition of Europe's Spaceport. Hence, Kourou's industrialists are reluctant to let the cat out of the bag when asked about their positioning vis-à-vis forthcoming calls for proposals, not least because they do not want to add to the uncertainties. *"We need to develop a maximum of synergies,"* says Yann Chevillon, head of EADS Space Transportation in Kourou, and Jean-François Dairon adds, *"everybody will benefit so we should not provoke unrest among our partners."* At present, industrial cooperation at the launch base is

characterised by consortia, in which a prime contractor usually coordinates a certain workload with its European partners. This type of relationship not only ensures that all parties involved benefit from collaboration, but also respects ESA's geographical-return requirement, an instrument that reflects the financial contributions from each of the Agency's Member States, but also the fact that Europe is a single coordinated actor in space.

At CSG, the often long-standing partnerships are well appreciated. They function as a security net and ensure the participation of small- and medium-sized enterprises – they even mean survival where withdrawal would be the result elsewhere. Furthermore, the prime contractors and subcontractors alike profit from the spillover effects of cooperation at CSG. Apart from technological and multicultural exchange, mutually beneficial relations can be exploited for further projects far beyond the launch base. The manner of economic cooperation at Europe's Spaceport is unique and crucial

for the competitiveness of Europe's launcher industry. The launch campaigns at Kourou are renowned for providing outstanding customer service. The companies operate around the clock if necessary and simultaneously assure top-level quality. The latter aspect is of particular importance as the maintenance and exploitation needs of a launch base translate into zero tolerance of failures.

What can sometimes seem like difficult working conditions actually foster real team spirit. Passion and enthusiasm have certainly helped to create credibility for Europe's competence and a feeling of trust on the part of Ariespace's clients. There is no doubt about all actors involved being committed to maintaining these values in the future. Companies such as Vitrociset, which according to Paolo Cavallini, head of the local branch of the Italian enterprise, aims to diversify its current activities due to the arrival of Vega, are aware of the value of cooperation. *"We want to play a major role without neglecting synergies with others..."* he comments, *"...and we hope that Vega and Soyuz will raise all our games a bit."*





Raising the Game of Kourou's Space Industry

For Jean-Pierre Cournède, local representative of the French company ENDEL, the challenge of a transition period overlapping with the arrival of Soyuz and Vega translates into a chance to reposition as an industrialist. The companies at CSG currently predefine their roles according to their core business, national belonging, relevance of the project and the overall business strategy. Certainly, chances differ. Companies like Alcatel Space, which provide the launch base's telecommunications network, are able to offer this kind of service irrespective of the launcher itself. Their window of opportunity is to enlarge the scope of their penetration. In contrast, activities that are closely linked to the launcher entail the inclusion of new technologies, which requires investment and sophisticated specialisation. Here, the prospect is to focus on or specialise in one or even both of the new arrivals.

"Particularly, small- and medium-sized enterprises will profit from current developments", believes Pascal Sassot, local representative of APCO Technologies SA, a Swiss company

involved in maintaining and operating the satellite-preparation complex, as well as providing mechanical engineering and public-relations services. There is no denying the fact that the possibility of enlarging the scope and range of activities is very promising, and all the more so if there is a snowball effect from Vega to Soyuz. *"If we gain the confidence of the possible clients for Vega, our participation in the Soyuz project would be more likely",* says Antonio De Pace of the company Peyrani Guyane. Although the Italian firm has considerable motivation to participate in Vega due to Italy's pre-eminent role in the programme, it is also aware of the benefits of Soyuz at CSG. *"Maybe our role could be stronger for Vega than for Soyuz..."* De Pace adds, *"...but we are very happy about the Russian arrival because there are plenty of business opportunities concerning installations."*

Amongst the various industrial players, Regulus and Europropulsion welcome the competition. As contractor for the P-80 engine, the first stage of Vega, Regulus, a joint venture by the Italian company AVIO and the French company SNPE, is at the core of Vega's lift-off from Kourou and at the same time testing new technology for

the boosters of Ariane. Having received the engines from Colferro in Italy, the company will charge them with solid propellant. Afterwards, Vega will be transferred to the Italian-French company Europropulsion, which will add the nozzle and igniter. *"At Regulus the mindset has already changed",* says Luciano Gamba, head of the company in French Guiana. Smiling, he adds: *"our major business is Ariane-5, but our staff are highly motivated to go beyond 'mono-production'. Imagine, if we can adapt our working tools to two different engines, we can enter a new production cycle!"*

Compared to Vega, Soyuz leaves a larger margin for manoeuvre, industrially speaking, due to the need to build a new launch zone, thereby making participation more attractive. Kourou's industry counts on exploiting past experiences in collaborating with Russia, whether on space-related or civil-construction projects. For example, Clemessy has already profited from a Euro-Russian partnership when building the clean rooms of the satellite-integration building for Soyuz at Baïkonur, and Peyrani intends to make use of its Russian relations stemming from a civil-construction project near Moscow.

However, such connections are not the only cards in play. ENDEL and MAN Spatial Guyane have also accumulated valuable experience. The French company, for example, has been dealing for 37 years with tariff and non-tariff barriers in French Guiana in the transport and logistics sector. The German subsidiary of MAN Technology maintains the Ariane-4 and 5 launch facilities, essential parts of which, such as the launcher table and the launcher integration building, had originally been designed and constructed by its parent company. The Ariane-5 prime contractor EADS Space Transportation too is already preparing to play an active role in setting up the Soyuz programme at CSG, and is also interested in another promising aspect of the vehicle's arrival, which is technology transfer.

Strategic Vision and Local Approaches

Doing business at CSG is important not only for financial and economic reasons, but also due to the image of progress and innovation associated with space activities, which has marketing and public-relations benefits. Individually challenged by the new dynamics in Kourou, companies situated on the launch base are responding with a variety of strategic approaches in order to maintain and improve their position vis-à-vis their competitors.

Some concentrate on the fulfilment of geographical return. They either collaborate locally by involving small firms such as Roving, which qualifies for the Danish return, or they Europeanise the holding company and create autonomous branches in other ESA Member States. Clemessy, a French company, for example, has been operating in French Guiana for more than 35 years and it introduced RMT Industrie-und Elektrotechnik GmbH, a German firm that is part of the same holding company, into the industrial landscape at CSG.

Others, like Cegelec, concentrate on diversification. Instead of focussing on one core business, the French company strives to offer a range of different services. Today, it is working in several domains at the launch base, including operation and maintenance of the satellite-preparation

complex and the fluids systems, management of technical modifications to the launch facilities, and the provision of communication services. Cegelec's Bernard Assié is convinced it is the right approach for his company, saying that: *"Due to diversification, we are flexible, adaptable and autonomous."*

During a launch campaign, demand for manpower increases significantly. For several weeks CSG resembles an anthill, but once the launch has taken place the companies face a rapid decline in activities. *"A major challenge is the alternation of service needs,"* says Paolo Cavallini of Vitrociset. *"There is a peak of work, but afterwards fewer people are needed. You can let a certain number go, but you cannot go below a certain limit because you will need them for the next campaign."* Understandably, this becomes a real challenge whilst belt-tightening is also on the agenda. However, diversification has helped some companies to overcome this hurdle. Their workforces have been trained so that each employee can be assigned to more than one activity. In times of operational inactivity, these companies can then engage, for example, in providing maintenance services.

Last but not least, business opportunities in French Guiana have helped a few companies whose activities are not exclusively space-related to expand into the local market. *"The investment into the country itself is very important,"* explains Jean-Pierre Cournède of Endel. *"We will concentrate on the potential of French Guiana. We are already involved in projects at Rochambeau airport and in St. Laurent du Maroni and..."*, he adds with a wink *"...if there is a problem at CSG you have to know which way to turn. That is why we decided to externalise and respond to demand beyond the launch base."* In contrast, there are companies whose potential transcends the frontiers of French Guiana, but they are constrained by local trade barriers. Antonio De Pace, for example, would not mind integrating the Brazilian branch of Peyrani with the one in French Guiana. Inter-regional coordination would benefit both sides, especially in terms of tapping the Brazilian labour market but, he says, shrugging his shoulders, *"Brazil is not a member of the European Union. We would have too many difficulties in obtaining working permits."*



Between Verve and Reality

Two of the factors contributing to the competitive advantage of Europe's Spaceport are certainly the enthusiastic dedication of its employees and the clear identification of the size and value of their contribution. The successful launch of an Ariane-5 and the smile on the face of a satisfied client who has just received the first tracking signal from their satellite about forty minutes after lift-off tells the story! This makes it all the more difficult to reduce costs by reducing staff, which means shifting staff from the space to the civil sector or even back home to headquarters is the least painful option in the short term.

Today, managers dedicate a lot of their time to motivating their personnel. Stabilising what has been achieved and building confidence is currently the watchword that keeps EADS Space Transportation ahead. *"We need to listen, to be available for discussions, and to exchange ideas. We need to explain the reality, its past, present and future,"* says Yann Chevillon who is proud to



Rosier Prospects

Everyone at CSG agrees that Ariane will continue to be the main workhorse, but the arrival of Vega and Soyuz will certainly complement it and help to stabilise activities at Europe's Spaceport. The latter, which provides Europe's only guarantee of independent access to space, will thereby become more resistant to global downturns and other future crises. Two particular aspects will play an important role in the future of the launch base, which will no longer be dependent on a single launcher. Firstly, Arianespace will become more flexible in offering launch services to a broad range of satellite clients, including serving a niche market with Vega. Secondly, technological progress will lift Kourou into a new era.

While Vega will validate new solid-propulsion technologies for Ariane-5, Soyuz is the key to learning more about the production techniques that have already resulted in over 1600 successful launches. The outcome will be a pool of reusable and new technologies that will allow Europe to respond dynamically to an as yet unknown future environment. On the one hand, it will boost the development of the Ariane programme, while on the other it will reinforce and broaden ESA's cooperation with its international partners. It should also make it possible to benefit that bit sooner from recovering satellite markets. Today, there is no denying the fact that Soyuz is the basis on which to open a gateway to the east, where rapid developments

are taking place in countries known for their low-cost manufacturing. The new launcher fleet will also provide Europe with a valuable enhancement of its image. Not only will it contribute to conveying the message that Europe is a unique actor in space, but it will also strengthen Europe's relations with Russia to an extent where eastwards expansion of the Union becomes a strategic reality.

In the meantime, Europe's Spaceport is about to undergo a metamorphosis, and Kourou's industrialists are optimistic. Even if today's markets are stagnating, even if clarifications are still needed, the political decisions that have been taken by Europe's Ministers have initiated a process of change that, once completed, will ultimately add value to the activities at CSG.

Acknowledgement

This article is based on a series of interviews with space-industry representatives based at Europe's Spaceport in Kourou, French Guiana. We would like to thank Alcatel Space, APCO Technologies SA, Cegelec, Clemessy, EADS Space Transportation, Endel, MAN Spatial Guyane, Peyrani, Regulus, RMT Industrie-und Elektrotechnik GmbH, Rovsing and Vitrociset for their kind cooperation. Regrettably, it has not been possible in this short article to refer to all of the companies that make up the CSG industrial landscape.



manage an enthusiastic team that is emotionally attached to Ariane-5. Vitrociset agrees: *"Our wealth is our staff. There are ambitious people among us and we need to create development opportunities for them."* The latter aspect has already been tackled at Clemessy, which provides internal education opportunities for its staff in order to encourage them to make an extra personal effort. This creates a concrete opportunity for ambitious staff members to benefit from the transfer of know-how and from personal development.

For some companies, the arrival of Vega and Soyuz at CSG will logically lead to an increase in personnel, but for others not. Nevertheless, their arrival will be extremely valuable for Kourou's local economy also, which is only too well aware of the yo-yo effect stemming from the rise and fall in the number of space missions being launched, and in the numbers of associated Ariane 'tourists' also. *"Here people are uncertain about their future"*, concludes Jean-François Dairon, *"but a fleet of launchers will boost team spirit and raise morale at the base."*

Council Decides.....

At the latest meeting of the ESA Council in Paris on 5 February, the Agency's Member States agreed to release the funds needed to put Ariane-5 back on track and actively prepare the development of future launchers. Moreover, cooperation with Russia in the field of launchers is now a reality through an Agreement that provides the framework for the 'Soyuz at the Guiana Space Centre' programme - with Soyuz launchers operated by Arianespace as of 2006 - and joint activities in the field of future launchers.

These decisions taken unanimously by the ESA Member States consolidate, now and for the longer term, Europe's access to space, enhancing its ability to meet the needs of its citizens. Europe can count on a strong and stable launcher sector while it works towards a new generation of launchers. The decisions also mean that its commercial launch operator, Arianespace, is now equipped to sustain Europe's guaranteed access to space while competing on the global launch-service market.