European satellite contractor Alcatel Space recently unveiled its new Spacebus 4000 platform at its plant in southern France. Mark Williamson, independent space technology consultant, braved the sunlight and beaches of the French Riviera to speak to Pascale Sourisse, the company's Chairman and Chief Executive Officer (CEO).

A new leader

from the 'old world'

Back in June, the French company Alcatel and Italy's Finmeccanica announced a forthcoming merger of their space divisions forming two new companies, the first concerned with space hardware development, the second with telecommunications services. According to Alcatel officials, the 'Systems Company' will be called Alcatel Alenia Space, while the name of the 'Services Company' has yet to be decided. The merger itself is expected to be completed by the end of 2004, by which time a name will have been released.

Alcatel Space's manufacturing facility in Cannes.

Mark Williamson: What is the status of the Alcatel-Alenia merger?
Pascale Sourisse: We are in line with our schedule and expectations. However, there is a lot of work to do in structuring this alliance, which involves a systems company and a services company, and we actually have to carry out four due diligence processes: for Alcatel and Finmeccanica, and for the systems and services parts of the companies. Once we have completed the due diligence exercise, and discussed potential valuations and adjustments, we need to go through the regulatory process with the European Union. We do not expect any problems and everyone is extremely motivated, but we have to go through the process nonetheless, and it will take some time.

MW: Why do it? What are the advantages?
PS: For the systems part - the industrial activities - the merger means we will be truly European. At the moment, we are essentially French, plus our Belgian and Spanish subsidiaries, but with Italy on top of that we become by far the European leader in satellite activity. Of course, there is Boeing and Lockheed Martin in the US, but we are not far behind at least one of them in terms of revenue. So we are among the top three global players.

In addition to giving us a strong European base, it gives us a stronger, more stable portfolio of activities. Alcatel's business is currently, on average, about 50 per cent commercial, 50 per cent institutional [ie, government, military or space agency contracts]. Alenia's

> "We see Asia as a very promising market. We have had contracts in a number of countries, such as Japan, China, Malaysia and Thailand. So we have a strong presence in the region."

business is currently more than 80 per cent institutional. The resulting entity will be about two-thirds institutional and one third commercial, which gives us a more stable base since the commercial market sees higher fluctuations.

It also gives us better access to Research and Development (R&D) funding and the ability to leverage this funding to help the commercial sector. This is because the institutional work feeds into the commercial work; we are talking about the same technologies, after all. Our industry is entirely dual, since defence and civilian systems use the same technologies, and there are lots of synergies between the two sides.

MW: What difference will the merger make, especially regarding future competition with EADS Astrium?

PS: We are already the leading commercial player in Europe, but we think that a better access to institutional programmes will also help our commercial activities because of the synergies I just mentioned.

In the institutional domain, today we are not the leading player in Europe, but together with Alenia clearly we are, so that will give us a leading role in future European programmes.

MW: Is there any chance of further mergers?

PS: We - both Alcatel and Finmeccanica chairmen - have said that the merger was about reinforcing our two companies. We are both open to discussions with EADS. We will see what happens in the future. It is hard to tell. We remain open-minded and believe we have a very strong position.

> "One example is the AGORA project, supported by the French space agency CNES and coordinated with activities in the European Space Agency (ESA). It concerns building solutions - satellites and the corresponding ground segment (hubs and terminals) - to bridge the digital divide. I'm talking here about low cost terminals, below 300 euros."

MW: What about future mergers with US companies?

PS: We know the US players very well and used to have very strong links with Space Systems/Loral (SS/L). We also have a strong relationship with Boeing and are working together on a number of programmes, including XM Radio, which is a very successful programme. The problem is that the current regulation in terms of export control - under the International Traffic in Arms Regulations (ITAR) - makes things very diffi-

The gloves are off

How is the merger between Alcatel Space and Alenia Spazio going to affect the satellite manufacturing industry? Can we expect competition amongst the remaining players to intensify or weaken as a result? **Richard Hooper**, Publisher of *Satellite Evolution Asia (SEA)*, recorded the opinion of Pascale Sourisse, Chairman and Chief Executive Officer (CEO) of Alcatel Space, during a visit to the company's facilities in the South of France.

"Alcatel Space has grown and made a lot of progress over the last few years. In 1998 we merged Alcatel Espace with Aerospatiale satellite activities to become Alcatel Space. We are now going through a further evolutionary phase with the merger with Alenia Spazio, which allow us to cement our status as Europe's leading player. Besides, we have reached a state where we, Alcatel Space, are recognised globally as one of the world leaders.

"Now there are four major players in the open marketplace. Boeing and Lockheed Martin in the US, and Alcatel Alenia Space and EADS Astrium in Europe.

"The institutional market should be able to sustain four players. But this is by no means certain: it is hard to tell what will happen. Quite simply, we will have to wait and see.

"As far as Alcatel Alenia Space is concerned, we can say that the merger has made us a very strong proposition. In addition, we can also draw from our experience of a company that always operated in an open, competitive market. As Alcatel Space, we have relied on the commercial market more than most of our competitors - Boeing and Lockheed, for example, generate nearly 80 per cent of their revenues from the institutional domain, while EADS also rely heavily on the same source of income. It has not always been easy for us in the past, but this experience has driven our competitiveness, making us an extremely efficient and focused company." ■

Alcatel prepares Worldsat 2 communications satellite for launch

The Worldsat 2 communications satellite, for which Alcatel Space is prime contractor, is undergoing final integration at Alcatel Space's Cannes facility in preparation for transfer to the Baikonur launch site in Kazakhstan. This strategic addition to US operator WORLDSAT's fleet, a unit of SES GLOBAL, will be positioned at 37.5 degrees West. This orbital location allows it to cover North America, the Caribbean, South America, Europe and Africa. Worldsat 3, currently being built at Alcatel Space facilities, will extend Worldsat assets to the Pacific Ocean Region.

Worldsat 2 is the first satellite to benefit from the complete array of advanced technologies implemented by the geostationary communications satellites based on the Spacebus 4000 platform.

The Spacebus family is the result of 20 years of continuous advances with an ongoing focus on reliability.

The Spacebus family already has an impressive track record, with 51 platforms ordered of which 11 currently under construction.

The Spacebus 4000 expands the Alcatel Space portfolio of solutions to meet all the demands of its customers. These customers expect increasingly powerful satellites, weighing up to six metric tonnes and delivering 16kW of power with 120 onboard transponders. At the same time, they need more flexible satellites able to fulfill a variety of missions. To guarantee compatibility with high-power performance, Alcatel Space has also developed the new generation Avionics 4000 based on a 100 Volt power bus. Flexible, modular and fully integrated with a central onboard computer, it is a world's first to launch an Attitude and Orbit Control System (AOCS) with a built-in star tracker for use in Geostationary Earth Orbit (GEO). The Spacebus 4000 is designed to accommodate the communications services of tomorrow, such as High Definition TV (HDTV) and broadband multimedia.

Worldsat 2 enables simultaneous operation of 72 C-band channels. 24 transponders on Worldsat 2 have been contracted by SES ASTRA which will market this capacity in Africa under the name ASTRA 4A.

The substantial capacity of the satellite will also provide reliable, cost-efficient communications solutions for a variety of users, including broadcasters, cable programmers, Internet service providers, government agencies, educational institutions, carriers and private networks. ■

cult for transatlantic alliances. We can work together on an ad hoc basis, project for project, but for a structural alliance you want to be able to develop a synergistic relationship.

MW: What about competition or collaboration with Asian manufacturers, such as ISRO, CAST and MELCO?

PS: We are already partners with MELCO on the Japanese navigation programme MTSat and MELCO is a major equipment supplier to Alcatel. We work in partnership with ISRO on certain programmes and also cooperate with CAST. However, these entities are not present in the commercial satellite market, in that they do not submit bids [as satellite prime contractors].

In the institutional domain, the market is really fragmented: American suppliers have access to American funding, European suppliers to European funding, Japanese to Japanese funding, and so on. So in the institutional programmes it is not a question of competition, it is really a question of partnership. For example, the Chinese, Indians and Russians have said they want to cooperate on the Galileo satellite navigation system and are ready to contribute funding. Of course, they want to get some industrial return for this, so it is a question of discussing the appropriate partnership.

MW: With regard to your key geographical markets, how do you see developments in Asia?

PS: We see Asia as a very promising market. We have had contracts in a number of countries, such as Japan, China, Malaysia and Thailand. So we have a strong presence in the region.

There is a real need for satellite services in a number of countries because of a lack of terrestrial telecoms infrastructure. The big trends we see in the Western World are also relevant in Asia, like the broadcast television field which is moving towards High Definition Television (HDTV): it is already a reality in Japan and will spread to other Asian countries as well. Then there are countries like China which have a huge need for television services via satellite, and this market will develop because the Chinese government is

Worldsat 2 at the Cannes facility. Picture courtesy of Alcatel Space

Below: Worldsat 2 payload. Picture courtesy of Alcatel Space.

now in favour of developing these services. Of course, another domain is broadband and high speed access to the Internet.

MW: Talking of broadband, you used to be involved with a company called SkyBridge...
PS: Yes, we still believe very much in broadband services via satellite, but it is taking time to implement due to a number of reasons. However, the fact that broadband services are developing quite fast on terrestrial networks is creating some demand on satellite networks as well, because people want access to broadband even if they are based in rural, low population-density areas. So we are working on number of projects.

One example is the AGORA project, supported by the French space agency CNES and coordinated with activities in the European Space Agency (ESA). It concerns building solutions - satellites and the corresponding ground segment (hubs and terminals) - to bridge the digital divide. I'm talking here about low cost terminals, below 300 euros.

MW: So is SkyBridge dead?
PS: The constellation project was put on hold about three years ago, because of the crisis in the telecom field which made it impossible to fund. At the end of 2001, we refocused SkyBridge on services based on Geostationary (GEO) satellites and then we signed an agreement with SES on Satlynx, which is concerned with providing broadband services in Europe using geostationary satellites.

MW: What are the current trends in satellite manufacturing regarding spacecraft size? The introduction of the Spacebus 4000 suggests that you believe it is generally upwards.
PS: It is. If you look at what has happened over the years, it is going upwards. We think that with our current products - the Spacebus 3000 and 4000 - we have the right products to serve the essential part of the market. We also think that there is a need to prepare for the larger sized satellites and have a cooperative programme with Astrium to develop a higher powered platform called Alphabus.

MW: What is the status of the Alphabus platform?
PS: It is moving along, but taking time because of the budget issues of which we are all aware in Europe. The first announcement we made about Alphabus was in 2001, so we have been working on this for three years. We have studied the concept and the specifica-

Alcatel has signed a contract with RSCC

Alcatel has signed a contract with the Russian Satellite Communications Company (RSCC) to develop and deliver the payloads for the Express AM33 and AM44 communications satellites. The two payloads - electronic equipment which specifies the satellite mission - will be manufactured in Alcatel Space's Toulouse plant and then integrated into Express-AM platforms produced by NPO- PM in Krasnoyarsk, Russia.

The contract has been signed in Russia in the presence of the French Minister of Finance, Nicolas Sarkozy, Alcatel's President and Chief Executive Officer (CEO), Serge Tchuruk and the General Director of RSCC, Youri D. Ismaïlov.

The new Russian Express AM33 and AM44 communications satellites will carry C-band, Ku-band and L-band transponders. The spacecraft are designed to provide digital TV and radio broadcasting, telephony, data transmission channels, videoconferencing services and Internet access. They will be also used to deploy communication networks by applying VSAT technology across the territory of Russia, CIS countries, Europe, Asia and Africa.

Alcatel Space has extensive experience in the development of Russian spacecraft equipment. Today three RSCC Express-A satellites (A1R, A2, A3) and the new Russian Express AM11 and AM22 communications satellites are equipped with the payloads produced by Alcatel Space. In August, Alcatel Space delivered the Express AM2 satellite payload while AM3 has just been shipped from Alcatel Space's facility in Cannes to NPO-PM's factory.

During the signing ceremony in the Hotel President, Tchuruk said: "This latest contract confirms our position as a reference partner to the Russian Space industry for communications satellites. At the end of this programme, we shall have delivered eleven payloads to NPO-PM for Russian and European telecommunication space programmes."

The co-operation between Alcatel Space and Russian partners started in the mid-1990s with the construction of the Sesat satellite for Eutelsat. ■

tions are complete, but we have not started developing the platform.

New projects sometimes take time to implement - take Galileo for example - but we believe there is a need for larger platforms, for instance for multi-beam satellites using frequency reuse patterns. This higher capacity, higher on board power and so on, goes beyond what Alcatel and Astrium can currently supply. The Spacebus 4000, for example, currently supplies a maximum of about 16kW.

MW: Do you really believe there are customers out there for this size of satellite and even larger ones?

PS: Boeing already has a satellite this large in its 702 series and there are customers in the US that have already purchased multibeam satellites, so we think there is a market.

MW: On the other hand, are not smaller satellites in fashion again now?

PS: Yes, that is also true and we are also working on this. We used to have smaller satellite buses, of course, but we are now working on how to upgrade or modernise these platforms to be very cost-effective for today's smaller satellites. The challenge there is really costs; technically speaking, many players can build a small bus, but at what cost? It must be cost-effective.

MW: So which bus would a relatively small, 5kW satellite use in your range?

PS: That would be the lower end of the Spacebus 3000 series. We are selling the Spacebus 3000 and 4000 in parallel, with some overlap depending on customer's requirements.

MW: Reliability has always been a key concern, but insurers are taking an even greater interest in it these days. Lockheed Martin's A2100, for example, was voted most reliable satellite in a recent survey...

PS: It depends on which parameters you choose for the comparison. You need to look at the period. We are also ranked first according to certain parameters and I could find parameters where Astrium would be ranked first.

> "It is moving along, but taking time because of the budget issues of which we are all aware in Europe. The first announcement we made about Alphabus was in 2001, so we have been working on this for three years."

MW: Can you say anything that would encourage insurers who believe satellites are becoming more unreliable about the reliability of satellites in general?

PS: I am not sure that satellites are getting more unreliable. The problem is that the satellites are getting bigger and when there is a problem it involves a larger amount of money. But the whole industry is focused on reliability issues because it is very important to get those insurance rates down. It is important for our customers, but it is also important for our own business, of course.

I am not pessimistic about reliability. I think the industry can produce good satellites. ■