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ESA's new Director General, Jean-Jacques Dordain, took office in July 2003. In September, he issued a four-year plan for the future of ESA called 'Agenda 2007'. In this interview he talks about the main points of how 'Agenda 2007' is going to change the roles of ESA, the European Union and European space industry.

After three months in office, you have issued a 41-page plan for the future of ESA in the next four years, called 'Agenda 2007'. Could you summarise the key points of this plan?

'Agenda 2007' is a big document, so naturally it is hard to sum up in a few sentences. At the moment we have the paradoxical situation in the space sector that the demand for space systems is going up while the public budget declines. On the one hand, every European citizen depends on space systems – I do not think that there is a single European who does not make use of space technology – and consequently the demand for systems is increasing. Because the European Union is enlarging its borders and widening its

scope in the security domain, there is also new demand, for example to reduce the digital divide between old and new Member States. On the other hand, the public budgets dedicated to space are decreasing and space industry is in a crisis with its capability decreasing by around 30 percent. There is a clear discrepancy between increasing demand and decreasing supply. In 'Agenda 2007', I say that we have to close that gap. This largely depends on the relationship between ESA and the European Union, and the main objective of this relationship is the increase of resources for space to reconcile the supply with the demand. Our respective roles are clear: the EU is in charge of the demand, while ESA provides the solutions.

In recent years, restructuring in the European space industry has produced a small number of major players. How will 'Agenda 2007' change the scene for European space industry and what role does ESA play in strengthening its commercial competitiveness?

When we say we have to increase the resources dedicated to space, this implies that we have to reinforce the industrial capability in Europe and size it according to the demand. Industry is the condition *sine qua non* for providing solutions to the demand for space in Europe. Unfortunately, space is only a small element in a much wider context comprising aeronautics and the defence sector, and restructuring is not driven only by space. ESA has to make sure that future restructuring will not destroy capabilities that are necessary for developing and operating space systems. Another important role for ESA and Member State governments is to put European industry on an equal footing with international competitors in the commercial marketplace.

It is ESA's role to respond to the demand created by European citizens and for that we depend on industry for the supply. We have to make sure that industry is able to respond to the existing demands. One particular point where we can indeed help industry is to develop the technologies to make Europe more competitive. Europe is in a peculiar situation because industry cannot survive only on the money they receive from governmental programmes – the size of public programmes here is six to seven times smaller than in the United States.

The European Union will soon have ten new Member States. How will this influence cooperation between ESA and the EU?

The enlargement of the European Union will have tremendous effects on ESA. It increases the demand for space infrastructure, including the need to reduce the digital divide. Some new EU members will wish to join ESA, so we have to be ready and look at the conditions under which we could integrate them. These are important aspects for future collaboration.

With the first experiences in cooperating with the EU on the Galileo project, how will relations develop between our organisations in the coming years?

Of course, we are already successfully cooperating – the Galileo project is living proof of this – and we have to increase that cooperation. We need to increase resources for the further development of space systems, and a Framework Agreement between ESA and the European Commission with this content was adopted by the ESA Council on 12 November, after the EU Council had adopted it on 20 October. It was formally signed on 25 November. This Agreement provides the institutional framework to set up new programmes. As it is valid only for four years, however, we still need to

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further increase institutional relationships between ESA and the European Union. I believe that we must acquire legitimacy within the EU institutions. At the moment we are completely separated from them and cannot increase our cooperation without this legitimacy. We are therefore at the very beginning of the relationship between the EU and ESA.

How realistic is the envisaged 30% increase in ESA activities, based on an increased financial contribution from the EU?

The question is not whether this planned increase in activities is realistic, but what is demanded from us. I think 30% is the right order of magnitude. We need to take the increase step-by-step because more solutions mean more industrial capability and more competences, and we cannot increase these in one day. The increase is realistic in technical terms. As far as the

budget is concerned, it really corresponds to the perceived demand.

Do you think that a dedicated Commissioner for space affairs and space budget could also be a solution for this? How important is this for ESA and the EU?

Of course it is not for me to define the new European Commission, but it is essential that there is a Commissioner not necessarily in charge of, but at least interested in space, like Commissioner for Research Philippe Busquin. The fact that he is interested in space has been instrumental in establishing the relationship between ESA and the European Community. However, in terms of meeting the demand, a space Commissioner alone is not sufficient – space covers many areas, such as transport, environment and security, and we need to maintain good relations with

these officers as well. A Commissioner in charge of space is of course important to promote space within the Commission, but the demand stems from the individual policies. I am very happy with the White Paper that Commissioner Busquin presented on 11 November because it is fully coherent with ‘Agenda 2007’. It is exactly what I was waiting for: it clearly states that there is a demand and it asks for the European Union to be more involved in space activities, including recruiting more resources.

You have mentioned the possibility of Russia becoming an Associate Member of ESA. What role does ESA play in drawing Russia closer to Europe?

In ‘Agenda 2007’, I propose that Russia becomes an Associate Member of ESA because it is Europe’s neighbour. Russia has such a big potential in all areas of spaceflight and technology – and it is



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high time for us to have a closer relationship with them. A concrete example of that cooperation could be launching Soyuz from Kourou, but I personally think we need to go beyond mere cooperation and work together on an institutional basis.

Do you think ESA will cooperate more closely with China in the future?

China is already a large space power and has an impressive space capability. At the same time, they are a good customer for space infrastructure – in a country of that size and with such a population and huge economic growth and little ground infrastructure, there is certainly a high potential demand. They are a significant space player and we definitely cannot ignore them. Cooperation might be more difficult than with our long-standing partners the USA and Russia, but I do see possibilities, certainly within the Scientific Programme.

In your opinion, what problems does ESA currently have?

First of all, ESA has a long track record of successes in building up programmes, pulling together resources, development and operations. We have the ability to develop satellites, all of them successes, and launchers – achievements to be proud of. It is mainly thanks to ESA that European citizens can depend today on space-based products and services.

However, there are a few things that are limiting factors and are on the agenda for change. For example, ESA is funded almost exclusively by its Member States' research budgets, although our activities go far beyond research and development alone. At the moment, as I have already said, we are not part of the EU institutions and framework, but I think we are starting to remove this obstacle with the Framework Agreement. Clearly, however, we need closer bonds with the EU.

Thirdly, ESA is not involved in security and defence issues at the moment, and I think this should be changed, as there is no fundamental technological difference between civil and defence systems. The best examples are GPS, a US military system used for civil purposes, and Galileo, a civil system that will also be used by the defence community. In that sense, I would like ESA to be involved in the procurement of the space segments required by the defence sector. However, this is more extending rather than correcting the scope of ESA. We do not need to do different things, but to respond to the demand and do more and extend the scope.

Is it planned to perform future Earth Observation missions in cooperation with other agencies, such as the United States?

I think there will be more Earth Observation missions, but this is again a question of demand. We need to respond to the environment and security policies of our Member States. These cannot exist without a certain space infrastructure. We do not do Earth Observation and increase activities to please our own engineers, but because there is a strong demand from the outside. One of my maxims is 'Don't propose solutions without a problem!' This means that we have to understand the problem and the demand first, and only then design a solution.

How high is education on your list of priorities?

Education is a very, very important aspect for ESA. There is no space activity without scientists and engineers, and I must say that I am scared by the fact that interest in science is declining in most developed countries. In 20 years from now, this could really become a bottleneck, and ESA cannot wait until then – we have to address this problem as soon as possible. Tomorrow's engineers

are still at school – even still at primary school – today. ESA is not in charge of education itself, but we can provide space-related tools to educators in Europe that could contribute to the revival of the attractiveness of science and engineering. Every schoolgirl and -boy is interested in space – astronauts, rockets and satellites, parabolic flights, everything – and we have to make sure that we provide a knowledge base so that we do not find ourselves without a skilled workforce in 20 years!

What is the relative value of manned and unmanned missions in the framework of 'Agenda 2007'?

Human spaceflight is now part of life and part of the history of mankind, and it goes far beyond space activities alone. Our curiosity did not come with the arrival of space activities, but long before that. Mankind has always been curious and we will definitely continue to explore space and send astronauts into space. At the moment, we in Europe are dependent on US and Russian flights, which means human spaceflight cannot be our number one priority. Because we have a lot to do to respond to the demands on Earth, I am doubtful that we can become independent of our partners soon. We are also dependent on our partners for the schedule for assembling the ISS. This, however, does not mean we will stop activities; on the contrary, I am convinced that human spaceflight is still at a very early stage and that we will never stop exploring.

