

Europe's Rocket Builders Present Industrial Plan for Ariane 6

By [Peter B. de Selding](#) | Feb. 14, 2014



In what ESA Director-General Jean-Jacques Dordain called a “Valentine’s Day present,” four European rocket-hardware builders submitted a united proposal for how to build the next-generation Ariane 6 rocket. Credit: ESA photo

PARIS — In what European Space Agency Director-General Jean-Jacques Dordain called a “Valentine’s Day present,” four European rocket-hardware builders on Feb. 14 submitted a united proposal for how to build the next-generation Ariane 6 rocket using an organizational setup that turns ESA’s traditional practice on its head.

The four companies — Airbus Defence and Space, Safran, OHB AG’s MT Aerospace and Italy’s Avio — have been given “total carte blanche” to create a contractor team with only one goal in mind: Produce a vehicle that can be built and launched for 70 million euros (\$95 million), Dordain said.

“For years industry has been telling us: ‘Give us the freedom to organize ourselves as we want and we can be much more efficient,’” Dordain said here Feb. 13 during a conference organized by the French Aerospace Industries Association, GIFAS, and by Euroconsult. “They have their chance now, as we have put absolutely no constraints on them on geographic return or anything else. The only requirement is the cost: 70 million euros.”

François Auque, chief executive of Airbus Defence and Space's Space Systems division, which is prime contractor for Ariane 5, said Feb. 13 that if ESA would allow industry the same freedom in developing and building launch vehicles as the French Defense Ministry allows in production of the M51 ballistic missile, rockets in Europe would be less expensive to build and operate.

Auque's company is pushing hard for ESA to proceed both with Ariane 6 and with an upgraded Ariane 5, called Ariane 5 ME, whose development would cost around 1 billion euros and whose routine production would be no more expensive than the current Ariane 5, while offering a 20 percent increase in power and a restartable cryogenic upper stage.

Geographic return, sometimes called "fair return," asks governments to pay for ESA programs with the promise that their national industries will receive contracts that match the governments' contribution levels.

Dordain is reversing the process. Industry will come up with the most efficient industrial team — whether from 15 nations, or 10 or even just four — and ask ESA to endorse it. Dordain will then show his 20 member governments the results at a March 19 meeting of the agency's ruling council.

Dordain said it is at this meeting that he will present a 10-year launch-vehicle roadmap to his member states covering 2015 to 2024. A final vote on the way forward will come at a meeting of European governments in December, after the Ariane 6 industrial team refines its cost estimates and delivers firm cost commitments this summer.

ESA and industry divided the Ariane 6 work into about 15 packets, not including the prime contractor's role. In an informal briefing with reporters, Dordain said that 10 of these 15 work areas have sufficient industrial bases in Europe to offer competitive bids.

The five remaining categories either had no obvious candidate or only one, raising concerns of monopoly pricing. To get around the problem, ESA lumped these five work packages into the prime contractor's job and asked the four-company group to present a single proposal — with initial cost elements.

Dordain conceded that any specific cost commitments now will be difficult for Italy's Avio S.p.A., which is being held for sale by its owners. Safran and Airbus have both expressed interest in purchasing Avio, whose role as solid-rocket fuel and stage builder for Europe's Vega small-satellite launcher could give it a leg up in the Ariane 6 competition.

Despite the concerns of France's Air Liquide, which supplies cryogenic fuel for the main stage of the Ariane 5 heavy-lift rocket, the Ariane 6 design features two solid-fueled strap-on boosters and two solid-fueled lower stages — all four using identical motors — topped by a cryogenic stage.

With Germany angling for the upper-stage work, Air Liquide's French operation sees its role in Ariane shriveling in the current Ariane 6 design. The company continues to lobby the French government to reconsider the Ariane 6 design.

For the moment, Dordain is focusing on the only design that ESA and the French space agency, CNES, determined could deliver a rocket carrying up to 6,000 kilograms of satellite payload to geostationary transfer orbit for a cost of 70 million euros.

CNES Deputy Director-General Joel Barre said Feb. 13 that the Ariane 6 model is based on nine launches per year, each carrying one satellite. That is equivalent to four and one-half Ariane 5 liftoffs given that each Ariane 5 carries two satellites.

To maintain a launch rate averaging nine per year, Barre said, Ariane 6 will need to win a good share of the commercial satellite market even if its lower cost means it can also capture more of the European government market than does Ariane 5 now. Most European government satellites now launch on Vega or the Europeanized Soyuz rocket, imported from Russia.