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NEWS FROM THE 6TH ANNUAL ILAN RAMON INTERNATIONAL SPACE CONFERENCE

Israel Eyes Program To Boost Competitiveness in Space

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Public officials and Israeli space lobbyists say they are very close to securing support from Israel's treasury for a new national space program that joins government, industry and private investors in a collective bid to position the country among the world's top five suppliers for the commercial and civil space market.

The prospective government-endorsed program aims to boost opportunities for international cooperation, revive a stagnating commercial and civil space sector, and preserve Israel's relative edge in small, maneuvering military and dual-use satellites.

A national space task force recommends 1.5 billion Israeli shekels (\$404 million) in government funding over five years, part of which could come in the form of tax breaks and other incentives for industry and private-sector investors. In return, proponents project \$5 billion in revenue within a decade, with orders for new satellites averaging four each year.

Proposed funds would come on top of the approximately \$100 million earmarked from Israel's annual defense budget for military space.

"We built a program that within five years will yield a few billions of dollars for our industry ... and position Israel among the world's five leading providers of space products and services," said Isaac Ben-Israel, director of Israel's National Research and Development Council, who headed the task force in his role as Israel Space Agency chairman.

"With these funds, we can build two research satellites and two imaging satellites per year ... and grab back our edge in the communications satellite industry," he said.

In a Jan. 31 address at the Fisher Institute's sixth annual Ilan Ramon International Space Conference here, Ben-Israel characterized the national space initiative as imminent, with implementing funds likely to be approved "in a matter of days."

"We have approval from the prime minister and relevant government ministries and now we're in final discussions with the treasury," he said.

As for return on investment, Ben-Israel said task force projections of \$5 billion within a decade are realistic, given what by some estimates is a \$250 billion global space market. In addition to new satellite builds, the program is expected to fuel demand for innovative electric propulsion, transponder control systems, data links, ground station technologies and other locally developed products and services.



European Space Agency (ESA) Director-General Jean-Jacques Dordain (sitting above left) signs an agreement in Tel Aviv, Israel, with Zvi Kaplan (sitting above right), director-general of the Israel Space Agency. Attending the signing are (back row from left) Karl Bergquist, ESA; Menachem Greenblum, director-general of the Israeli Ministry of Science and Technology; Daniel Hershkowitz, Israeli Minister of Science and Technology; and Isaac Ben-Israel, chairman of the Israel Space Agency.

At first, funding would be channeled into miniaturization, materials and enabling technologies in support of Israel's remote sensing and telecommunications sectors. As for international cooperation, Ben-Israel cited Europe, Russia, India, Brazil and Singapore as potential partners for future investment or cost-sharing programs.

Menachem Greenblum, director-general of Israel's Science and Technology Ministry, said the new program for commercial and civil space would be administered by the Israel Space Agency (ISA), long budgeted at less than \$1 million a year.

Citing a Jan. 30 framework agreement signed here between ISA and the European Space Agency (ESA), ISA Director-General Zvi Kaplan said the proposed national space program would allow for reciprocal funding for major, multiyear cooperative programs.

"The ESA agreement signed today and similar agreements we have with NASA, [the French space agency], the Italian space agency and other international organizations will become so much more substantive once a properly funded national space program is in place," Kaplan said.

Greenblum, whose ministry has oversight over ISA, said he expected "tens of millions of shekels" in 2011, followed by a similar amount in 2012. "Then we'll be in position

to ramp up to the significant funding levels recommended by the task force," he said.

Asked to confirm the funding plan, a treasury spokesman said the matter is still pending. "Coordination work on a government space program remains under review by the relevant authorities and a decision has not yet been taken," the treasury said Feb. 1.

Chaim Eshed, director for space programs at the Israeli Ministry of Defense, said he is confident the ambitious national program will be launched sometime this year.

"I see 2011 as a very important year of leveraging," said Eshed, the designated policy planning director for the new civil space program following his retirement later this year as the Defense Ministry's longtime space czar.

"We're looking at a very real program that vectors decades of defense investment into the commercial sector. A robust commercial sector will attract private investors, whose combined efforts provide the growth engine for leveraging the capabilities we must continue to develop for security needs," he said. "Think of it as a force multiplying triangle ... but it all has to start with [non-defense] government funds."

Industry executives here, while supportive of the task force's aims, were much less optimistic about near-term prospects for

government funding. Since early 2007, industry leaders have been clamoring for a comprehensive national space policy and the requisite funding to preserve Israel's space industrial base.

Apart from rhetorical support for Israel's space sector offered at annual Fisher Institute events and the occasional high-profile parliamentary hearing, Israeli satellite exports remain negligible; its communications satellite industry is squeaking by on its sole remaining contract, for the Amos 4 satellite, and Ministry of Defense funding rarely translates into more than one new satellite order every two or three years.

"More than 25 years of [combined government and industry] investment in research and development and infrastructure brought Israel to a leading position, but we're finding it hard to exist under current conditions," said Haim Rouso, Elbit Systems corporate vice president for engineering and technological excellence. In remarks to conference participants, Rouso recounted his company's inability to leverage the millions of dollars invested in off-shore acquisitions and recent infrastructure upgrades through export sales.

"We've had some successes, but on balance, it's been a failure," said Rouso, a former president of Elop, Israel's premier provider of satellite imaging payloads. "The gap between requirements and capabilities has put us on a trajectory of losing people, losing business and questioning our prospects for the future."

Without matching Israeli government funds to support bilateral and multilateral cooperation, agreements like that signed with ESA are essentially meaningless, he said. "There's no chance that Israel will get into any real projects with ESA without reciprocity. ... We Israelis, instead of relying on chutzpah and innovation to cover our share, must be able to tap into an available budget," Rouso said.

"We need a long-term, non-military national space program led by ISA with significant funding, not crumbs ... and I hope efforts in recent months will finally bear fruit," he said.

According to the veteran Elop executive, if the Israeli government honors basic funding obligations, industry will deliver "at least a three time" return on investment.

"Industry will provide attractive challenges for hundreds of top scientists, entice the return of our citizens who are studying or working abroad, prevent brain drain of new students and generate strong cooperation with academia to educate and inspire the next generation," he added.

Accord with ESA Provides Backdrop for Conference

European Space Agency (ESA) Director-General Jean-Jacques Dordain, along with the executive director of the Paris-based International Astronautical Federation and national space coordinators from European Union (EU) member states generated an unusually large footprint over a traditionally U.S.-centric annual event here at Israel's Fisher Institute for Strategic Air and Space Studies.

Nearly 1,300 government, industry, military and academic representatives from around the world took part in the two-day in-

ternational conference commemorating Israeli astronaut Ilan Ramon and members of NASA's ill-fated STS-107 Columbia mission.

As in years past, NASA and the ministry that oversees the Israel Space Agency were co-partners in the sixth annual Ilan Ramon International Space Conference held in Herzliya, Israel, Jan. 30-31. NASA Deputy Administrator Lori Garver described the annual event as an important venue for cultivating future Israeli participation in the U.S. space program.

But it was the European agenda that dominated discussion here, given the prospects for cooperation following a Jan. 30 framework agreement concluded between ESA and the Israeli Ministry of Sci-

ence and Technology.

"Our relationship with Israel is not starting today, as many ESA missions are already benefiting from Israeli technology. But today we shall open a new page with the signature of this agreement that provides the legal framework for cooperative research and development for peaceful means of space exploration," Dordain told reporters here.

Citing Israel's ongoing bilateral space programs with France and Italy, and scientific projects funded through EU's Seventh Framework Programme (FP7), Dordain said the new agreement allows ESA and Israeli officials to begin work on a roadmap for future collaboration. When asked about Israel's ability to cover costs of ESA cooperation,

Dordain replied, "Obviously some budget will be required, but we have not reached the stage for such discussions."

Sources here said Israel is eyeing the Global Monitoring for Environment and Security (GMES) program as the first large cooperative project with ESA, although few here expect the requisite Israeli government funding for the foreseeable future. Backed by the EU and managed by ESA, GMES is a series of large Earth-observing satellites equipped with radar and optical sensors.

"We're all looking at GMES as an opportunity for cooperation, but without long-term government funding, the chances

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