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NEWS FROM THE 8TH ANNUAL ILAN RAMON INTERNATIONAL SPACE CONFERENCE



Menachem Kidron

Increase in Funding Fuels High Hopes for Israeli Space

Israel's government approved plans for a new civil space program in mid-2010, but it was not until early January that the promised 180 million shekel (\$48.3 million) annual budget made its way into Israel Space Agency accounts. For an agency that had squeaked by for decades on just a few million dollars each year, 2013 marks a trajectory of high hopes and new beginnings for Israel's civil space sector.

When combined with the approximately \$80 million invested annually in Israel's military space sector, government and industry representatives were bullish on the prospects of preserving Israel's edge in its current niche of small, very high-resolution electro-optical and radar imaging satellites.

Opher Doron, director of the MBT Space Division at Israel Aerospace Industries (IAI), noted that Israel now has four lightweight submeter electro-optical satellites in orbit as well as capabilities provided by the IAI-built TecSAR synthetic aperture radar satellite.

He said IAI has a backlog of six satellites, which includes a recently signed contract with Italy for a next-generation optical satellite, the Amos-4 and Amos-6 telecommunications satellites, and a joint vegetation and environment monitoring satellite with the French space agency, CNES, which is scheduled for launch in the second half of next year.

"We've started the year on a very positive note. I'm optimistic because we now have a funded civilian space program in Israel which will help increase competitiveness and push us in new directions of space exploration," Doron said.

Menachem Kidron, director general of the Israel Space Agency (ISA), said the new national space program aims to position Israel

among the five leading spacefaring nations within a decade. More than half of ISA's annual budget has been earmarked for international cooperative programs, and about 25 percent will support the local space industry through research and development initiatives.

In the first public presentation of ISA initiatives, Kidron said Israel has proposed working with NASA's Ames Research Center on an ultraviolet satellite for early detection of supernovas. Israel's proposed UltraSAT satellite aims to study exploding stars in real time and measure the rate of solar storms.

Proposed cooperative projects with the European Space Agency include a micro-electrical propulsion system for micro satellites in very low Earth orbits, and a new generation of Ruby laser diodes for space missions.

As for ISA-approved local research and development projects, Kidron listed new methods for maximizing satellite communications services; a low-power, high-strength next-generation computer chip for satellites; a chip that provides dedicated very small aperture terminals, or VSAT, consumer broadband capabilities; and the planned launch later this year of the InKlajn, Israel's first nanosatellite.

Kidron's Jan. 30 presentation followed an overview by Japanese astronaut Satoshi Furukawa, who offered a detailed account of investment priorities for the Japan Aerospace Exploration Agency and its \$2 billion annual budget. When asked about the vast differences between Israeli and Japanese funding levels, Kidron opted to focus on a glass half-full.

"With an annual budget of 180 million shekels, we're alive and breathing. It's not much, but it's not bad ... and it's much better than what we had for a long time," he said.

Space Chiefs Mark Decade Since Columbia Mission

Space agency chiefs, astronauts and leading industry executives from 15 nations were among the 1,000 gathered in Herzliya, Israel, Jan. 29-31 at an international conference marking the 10th anniversary of the Space Shuttle Columbia's fateful STS-107 mission.

With a focus on fortified cooperation and future initiatives, the annual event at Israel's Fisher Institute for Air & Space Strategic Studies brought hundreds of students together with veteran leaders for three days of presentations, discussions and special events honoring Israeli astronaut Ilan Ramon and fellow Columbia crew members who perished Feb. 1, 2003, when the space shuttle broke up upon re-entry after 16 days in space.

"Let's not forget why we're here," NASA Administrator Charles Bolden told visiting delegates. "It's up to all of us to build on their legacy."

At a pre-conference reception Jan. 28, Bolden said he hoped to renew NASA's cooperative agreement with Israel later this year to include several new projects for the coming years.

Lt. Gen. Susan Helms, a former astronaut and commander of the 14th Air Force, U.S. Air Force Space Command, encouraged more nations to join in efforts to preserve a safe environment for space operations.

In her Jan. 29 address, Helms said the annual conference has become "an internationally recognized, go-to event for exchanging information and promoting ... our common interest for safe usage of space."

Mazlan Othman, director of the United Nations Office for Outer Space Affairs, urged Israel to join the 74 members and 32 international organizations in the U.N.'s Committee on the Peaceful Uses of Outer Space (COPUOS).

"It's high time for Israel to consider joining," Othman said in her Jan. 30 address. She offered several working groups for Israel's consideration involving matters as diverse as debris mitigation, space weather and global navigation.

Ron Adam, director of the department for international organizations at Israel's Foreign Ministry, said a recent upgrading of Israel's national space program now justifies COPUOS membership. "We're starting to see significant change here, with meaningful budgets and new programs ... and it's about time we join this committee," he said.

Support But No Commitment On Space Station, China

In a Jan. 29 discussion on international cooperation, European Space Agency (ESA) Director-General Jean-Jacques Dordain said he would like to see European nations continue their participation in the international space station beyond 2020.

However, when asked if he was willing to commit formally to ESA involvement in the program beyond 2020, he demurred diplomatically: "Such a commitment is not possible given the fact that we have not been asked yet to extend our participation beyond that time."

Dordain responded similarly when asked if he supported greater ESA cooperation with China. Dordain said he per-

sonally favored proposals to enhance confidence-building measures with Beijing that did not win member support at ESA's ministerial meeting last November. Nevertheless, he cited several examples of how individual member countries are cooperating with China.

"All in all, I wouldn't say there are European walls blocking cooperation with China," Dordain said.

Italian Space Agency President Enrico Saggese said he, too, is personally pushing for greater cooperation with China's dynamic space sector. Saggese shared an anecdote from a conversation with a colleague from the China National Space Administration to illustrate Beijing's enviable position relative to other space powers.

"My friend invited me to attend one of their launches. And when I asked him when I should come, he told me to come any time. They have launches every day," Saggese said.

Denis Liskof, head of the international department at the Russian space agency, Roscosmos, said he chairs a working group with the China National Space Administration and is devising a strategic roadmap for Russo-Sino cooperative programs. In keeping with the diplomatic niceties of the event, Liskof said both Russia and China would welcome any overtures for cooperation that may come from the West.

Israel Air Force Commander Supports Launch on Demand

In the event's traditional annual address by the commander of the Israel Air Force (IAF), Maj. Gen. Amir Eshel pleased many here with the first public acknowledgement of the service's dependence on space.

"I'm ready to say — and this is very significant — that the IAF is dependent to a significant extent on the ability to exploit the space realm for different purposes," Eshel said.

To the untrained ear, the IAF chief's remarks appeared bland, insignificant and an obvious observation. But to Israeli experts, Eshel's utterance could signal significant boosts in military space spending.

"It's the first time an IAF commander acknowledged air power's dependence on space. It's the first time an IAF commander endorsed the requirement for responsive space, and it's the first time we're hearing unequivocal calls for more investments in military space," said Tal Inbar, head of the Fisher Institute's Space Research Center.

In his Jan. 29 address, Eshel said space provided Israel with strategic depth. "It preserves our qualitative edge and is a central element of our deterrence. It will allow us to use our assets persistently at all ranges, without violating another's sovereignty," he said.

In reference to air-launched options, Eshel said, "We must have an ability to launch satellites into space in a completely autonomous way, within a short time frame and with the capabilities to support operational requirements in wartime and in routine periods."

He also highlighted the need for a larger blend of space-based sensors. "Our need for a full picture is critical. We need flexibility from space almost down to the tactical level, with coverage not just for an hour or two. We need intimate access to areas that we are interested in," Eshel said.

— Barbara Opall-Rome, Herzliya, Israel