

Deep Space Industries Announces Plans for First Commercial Interplanetary Mining Mission

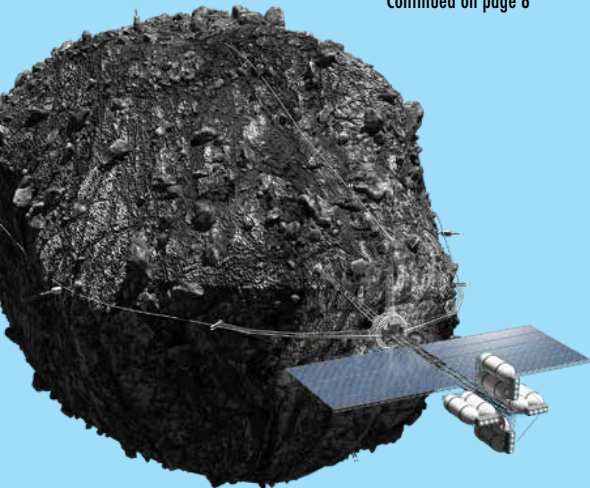
By Meagan Crawford; VP Strategic Communication
Deep Space Industries
4th August 2016

Deep Space Industries announced this month its plans to fly the world's first commercial interplanetary mining mission. Prospector-1™ will fly to and rendezvous with a near-Earth asteroid, and investigate the object to determine its value as a source of space resources. This mission is an important step in the company's plans to harvest and supply in-space resources to support the growing space economy.

"Deep Space Industries has worked diligently to get to this point, and now we can say with confidence that we have the right technology, the right team, and the right plan to execute this historic mission," said Rick Tumlinson, chairman of the board and co-founder of Deep Space Industries. *"Building on our Prospector-X mission, Prospector-1 will be the next step on our way to harvesting asteroid resources."*

Recently, Deep Space Industries and its

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The Tools of Change Are Here: What Will You do with Them?

By Alison E. Berman 24th June 2016 | NASA Research Park



Keynote speaker Dr. Dava Newman, deputy administrator of NASA

Digital connectivity is a defining characteristic of the 21st century. And though it's an often criticized aspect of modern society, it's also making us more aware of our fellow human beings. News has never spread so rapidly across the globe or so widely illuminated global problems that desperately need more attention.

"It's painful when we see an incident halfway across the world that's grotesque," said Ray Kurzweil this week at the Global Solutions Program (GSP) opening ceremony. *"But it's fundamentally a good thing because it harnesses our empathy to solve these problems...This is one world."*

Now in its 8th year, GSP is hosting 79 participants from 40 different countries, 16 global impact competitions, and has 49% women in attendance.

Their wild 10-week journey to form companies that use technology to address a global grand challenge began this week. The group includes an entrepreneur working with a bioprinted liver on a chip for drug discovery and a startup founder whose company turns waste from water purification into fertilizer.

At the opening ceremony, the overarching call to action for the new GSP class was very clear. We're living in the most connected and democratic time in history. We have more abundant access to information and technology than ever before. Now is the time to do something meaningful with it—we're all in this world together.

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SkyTran Closes Bridge Loan Tied to \$30 Million Series B Financing

By: Robert Daniel
SILICON VALLEY, CA 26th April 2016

SkyTran, developer of elevated and levitating high-speed rapid-transit systems for people and cargo, closed a Series B financing agreement. In a statement skyTran, based in NASA Research Park at Moffett Field, California, said the accord entailed *"execution of a bridge loan tied to a \$30 million Series B commitment."* The deal, negotiated and managed by Verita Merchant Bank of Hong Kong, enables skyTran to continue sales efforts and introduce the system worldwide. The company has demo systems in place at the NASA park and in Israel. SkyTran also has backing from Innovation Endeavors, the private venture-capital arm of Google Chairman Eric Schmidt.

SkyTran® Inc., Headquartered at the NASA Research Park (NRP) in the heart of Silicon Valley, announced the execution of a Bridge Loan tied to a \$30M USD Series B commitment. The Agreement, negotiated and managed by Verita Merchant Bank, a Boutique Hong Kong-based private investment and merchant bank, will allow skyTran to continue its global sales initiative and product roll-out.



skyTran is the developer of the patented, high-speed, elevated, levitating, energy-efficient skyTran Personal Rapid Transit (PRT) and Cargo Rapid Transit (CRT) system. skyTran consists of a network of computer-controlled, 2 and 4-person *"jet-like"* vehicles and cargo pods employing state-of-the-art, passive skyTran MagLev (STML™) technology. skyTran systems will transport passengers and cargo alike in a fast, safe, green, and economical manner. skyTran intends to revolutionize public transportation and the moving of light cargo within urban and suburban communities.

Verita Merchant Bank (VMB) is a boutique investment advisor and merchant bank. It represents global investors and structures international transactions worldwide. VMB assists investors, entrepreneurs, and management in building lasting companies that will have significant financial and human impact—companies that will create jobs, reduce carbon impact, and generally help provide for a greener planet.

Jed Schutz, CEO of VMB, stated, *"Along with our investors, we recognize the combination of a big vision, outstanding management, and cutting edge technology applied to growing urban gridlock. We have every confidence that skyTran, its patented and patent-pending technology, and its unique position in the market is assured."*

Regarding the funding, Jerry Sanders remarked, *"This funding, following as it does, on the heels of Innovation Endeavors' investment, is yet another big step in establishing skyTran as the 'go to' solution to substantially reduce traffic congestion and carbon pollution."*

skyTran has Technology Demonstration Systems (TDS) at the NRP and in Israel. The TDS demonstrates all skyTran system components required to roll out commercial systems. It also enables continuous testing, monitoring, and improvement of skyTran's technology in a controlled environment.

*Innovation Endeavors is the private venture capital arm of Eric Schmidt, Google's Chairman.



“to Boldly Go.....” - NRP Welcomes Public and Students to NRP June Global Entrepreneurship Panel

By: Kathleen Burton
1st October 2016

The public, NASA Ames employees, students and summer interns attended the NASA Research Park (NRP) Exploration Lecture: Global Entrepreneurship Panel 2016 on June 20 at 7 p.m. in Building 152. The panel was a satellite event to Stanford University's GES (Global Entrepreneurship Symposium) held on June 23rd at Stanford, with luminaries such as President Barack Obama attending.

The GES panel featured Dr. Dan Rasky, Chief, Space Portal Office at NASA Ames; Grant Bonin, Chief Engineer, Deep Space Industries (DSI), NRP; and Dr. Anshu Roy, President and CEO of Rhombus Power, NRP.

The speakers discussed how their teams achieved maximum success in the global arena based on the NRP's public-private partnership model.

“Being at the NRP is an amazing experience providing a much needed innovation environment for young companies like ours,” said Roy. Being an NRP tenant has provided a solid foundation for his shift from academia to the entrepreneurial world, he noted. *“For awhile in 2012, after founding Rhombus in 2011, I was building a neutron detector on my kitchen table, my fifth idea”* (after his Post-Doc work). *“Being at the NRP has provided an incredible business model, as I am surrounded by like minded partners and NASA contacts,”* he said.

The proof is plain to see. In June, Roy and a team of four entered Fukushima Nuclear Reactor in Japan to locate and replace a

malfunctioning detector. *“It was a highly contaminated environment,”* he said. *“This would have been impossible before our design for an accurate cloud-based monitoring system that detects nuclear reactor leaks and other problems.”*

frontier, using space materials as technology drivers. The company's near term vision is to go beyond Low Earth Orbit (LOE). *“The cost of launch is the bottleneck”* Bonin said. *“To get there we have to cross the ‘Death Valley’ of launch vehicles with their volume limitations.”* Another impediment: *“Exploration of space won't work if you must bring your own resources, so our plan is to use existing space materials instead.”*

But he admits: *“we must and are starting small”* to make the grand vision work.

The first step is to build a water-powered spacecraft to search for usable resources in space. DSI's small 50KG spacecraft will use a water based propulsion system that uses water vapor to generate thrust. If successful, DSI hopes to market this to NASA and other space agencies. DSI's larger goal is to launch to a deep space asteroid for a recon and mining mission by decade's end (Prospector-1). Lower hanging fruit is their plan for the Prospector-X mission in 2017, to be launched into LOE as a tech test bed for exploration spacecraft, with the *“pot of gold”* goal the possibility of harvesting asteroid minerals and metals.

Bonin noted that DSI's current NASA SBIR Contract Number is NNX16CK02C - *“Task Specific Asteroid Simulants for Ground Testing.”*

“We are creating and supplying a variety of asteroid simulants - that is, substances that exhibit and mimic the physical characteristics of different asteroid composite material.”

Besides being headquartered at the NRP, DSI recently opened an office in Luxembourg.

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Rhombus' vision, he said, *“is to develop the next set of solutions for a safe nuclear world.”*

Rhombus' advisory board includes Nobel Laureates Arno Penzias (Physics) and Alan Heeger, UC Santa Barbara (Chemistry).

Greg Bonin recently joined DSI, founded in 2012, an asteroid mining startup. DSI's vision is the industrialization of the space

Made In Space Plans to Create a Superior Optical Fiber in Microgravity

By: Emily Calandrelli (@TheSpaceGal)
13th July 2016

Made In Space, the company that owns and operates a 3D printer on the International Space Station, has announced their next big project: growing optical fiber in microgravity.

The company is scheduled to send a new manufacturing product to the ISS in the first quarter of 2017. If initial tests are successful, the company could begin producing higher-quality optical fiber for applications here on Earth, like fiber-based internet, medical devices and sensors for the aerospace and defense industry.

The idea is that microgravity could possibly be an ideal environment to grow fiber. Today, optical fiber is used in many ways, but perhaps the application we've heard about the most is for telecommunications purposes (like in Verizon FiOS or Google Fiber).

With fiber-based internet, information is transmitted through fine, hair-like glass fibers with pulses of light. While this is much faster than transmitting data with

electrical impulses through copper wire (the traditional method used by companies like Comcast), its efficiency is limited by the quality of the glass.

overall quality of the fiber. This can result in signal degradation and becomes especially problematic when transmitting data across long distances.



Made In Space's microgravity-optimized, miniature fiber drawing system / Image courtesy of Made In Space

Made In Space will attempt to create a better glass with their new product, "a microgravity-optimized, miniature fiber drawing system." While a quantitative comparison is premature, the company believes that microgravity-grown optical fiber would improve both the response time and

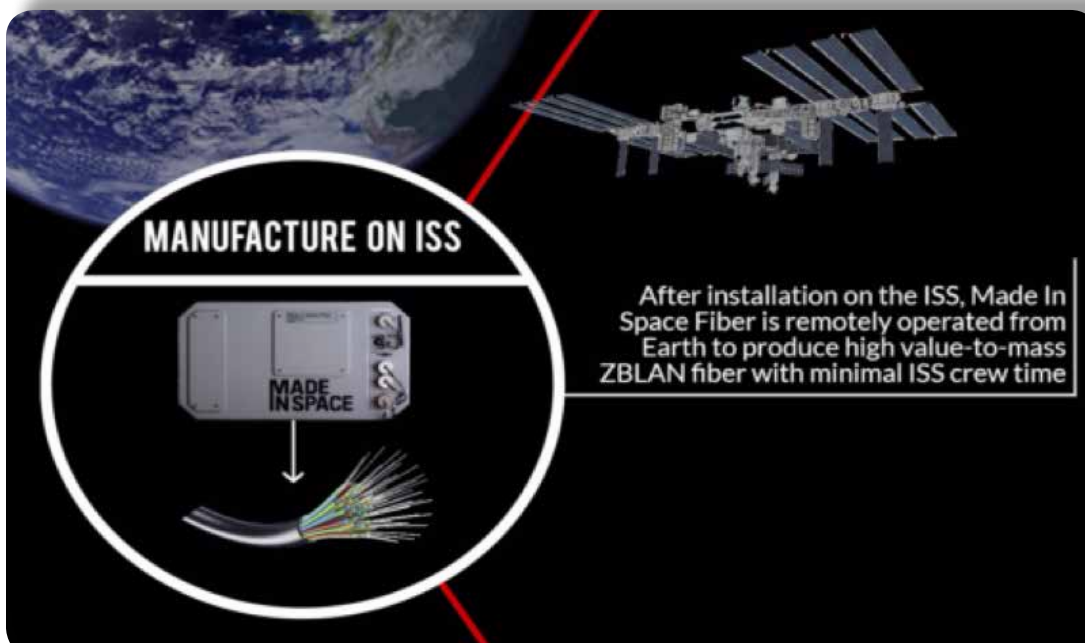
throughput advantage compared to traditional optical fiber currently in use for telecommunications.

Terrestrially produced fiber, grown under the effects of gravity, suffers from certain glass impurities and microcrystal formations. These impurities contribute to scattering and absorption loss and reduce the

response time and throughput advantage compared to traditional optical fiber currently in use for telecommunications.

"Made In Space's in-space manufacturing activities expand the commercial envelope to making valuable goods there too. We believe in-space manufacturing of goods valuable to people on Earth will soon drive significant commercial activity in space, perhaps one day creating a space-based economic boom."
— Andrew Rush, CEO of Made In Space

Made In Space has partnered with Thorlabs, an optical fiber and laser company. Together, they'll produce test quantities of microgravity-grown fiber on the ISS, and run further tests on the product once it's returned to Earth.



Infographic courtesy of Made In Space

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When Disaster Breaks the Internet, the CMU-SV Wireless Innovators Will Fix It—with Drones

16th August 2016

When a natural disaster strikes, not only does it put people's lives in danger—it can leave them completely in the dark. Earthquakes knock out power, tornadoes pull down phone lines, and hurricanes make cellphone and internet connections impossible. When all else fails, the only way to get in touch with emergency personnel—and loved ones—is the radio.

For both authorities and civilians, Ham radio can be a lifesaving tool. Unfortunately, though the number of licensed amateur radio operators has risen steadily, with more than 715,000 in the FCC database by the end of 2013, these "hams" only make up around 2% of the country's population. But every year, on the fourth weekend of June, amateur radio enthusiasts from across the U.S. and Canada fire up their radios to connect with each other and with people from around the world in an event known as Field Day, hosted by the Amateur Radio Relay League (ARRL).

"Amateur radio operators try to contact as many Ham radio stations as possible," says Yalei Song, an electrical and computer engineering (ECE) alumna and president of CMU-SV's amateur radio club, the Wireless Innovators. *"Sometimes, you have people in California speaking to people in Hawaii, or even Australia. We were even able to reach others in France. Some people get very competitive, seeing how many they can reach."*

Carnegie Mellon University's Silicon Valley campus has been participating in Field Day since 2014. But this year, the Wireless Innovators decided to have a little fun with more than just their radios.

"The average person today doesn't really use voice communications that much," explains ECE doctoral student Ervin Teng, the club's technical operations manager. *"What they care about is internet communication: text messages, photos. All of these things are incredibly valuable in emergency communications."* Normally, setting up radio and internet communications in remote or extreme



locations requires a large antenna mast, and a lot of power. This can take many hours or even days to establish—and in an emergency, time is of the essence. The solution? Drones.

The team at CMU-SV set up what they call a 'rapidly deployable flying network.' By attaching a Wi-Fi router to a drone, then flying the drone up above surrounding trees and buildings, the transmitter is able to connect to another

carry these drones out and create a network within minutes, providing Wi-Fi to an entire area."

This method is built on research Teng developed with ECE/CMU-SV Professor Bob Iannucci. They, along with the rest of the Wireless Innovators, are looking for more people who want to get involved.

"We would like to share our Field Day experience with the rest of the CMU community," says Song. *"Not only do we have the amateur radio club, but we're starting a drone club as well, so we can teach students how to build and fly drones for themselves."*

The drone club will bring together students who are enthusiastic about drones, encouraging each other to apply the engineering skills they learn in class to build and fly interesting projects. While these clubs create a fun atmosphere around the subject of amateur radio, every new development in emergency communications technology could save countless lives when disaster strikes. If this year's Field Day event

is any indication, the next generation of emergency response technology will be thanks to a small group of enthusiastic amateurs.

For more information on the CMU-SV Wireless Innovators, please visit: <https://www.cmu.edu/silicon-valley/wireless-innovators/index.html>



site several kilometers away and relay the connection back to people on the ground, without the need for costly, complicated infrastructure.

"We were able to watch a YouTube video on our phones on the ground, connected to the drone in the air," Teng says. *"It paves the way for further work in emergency communications. You can*

Tools of Change continued from page 1

It's a sentiment inspired in no small part by space exploration, an endeavor in which courageous pioneers using cutting-edge technologies look down on the whole Earth.

Keynote speaker Dr. Dava Newman, deputy administrator of NASA and former aeronautics and astronautics professor at MIT, spoke about progress in space exploration and NASA's goals for the future. Newman showed off detailed (and now iconic) snapshots from the New Horizons flyby of Pluto, noted that the Juno mission is scheduled to arrive at Jupiter in July, and looked ahead to the James Webb Space Telescope, which will look further out into the universe than even Hubble.

Of course, interplanetary travel has long been the domain of satellites and rovers, but Newman also outlined plans for human exploration beyond the Earth and Moon. She said NASA is planning a new rover on Mars by 2020 and boots on Mars by 2030.

Space exploration is about many things, but perspective is maybe one of its greatest gifts. We now know our sun is one of billions of stars in the galaxy, and our galaxy is one of billions in the universe. The Earth is but a blue mote of dust captured in the famous 1990 Voyager 1 image that inspired Carl Sagan to write:

"There is perhaps no better demonstration of the folly of human conceits than this distant image of our tiny world. To me, it underscores our responsibility to deal more kindly with one another, and to preserve and cherish the pale blue dot, the only home we've ever known."



Ray Kurzweil

Throughout Newman's talk, she repeated the phrase, "We're all in this together." And Kurzweil agreed. More and more of us can access the tools of change, and with them society is ready to step beyond the world's barriers and boundaries.

This year's GSP class will learn all about today's most powerful tools—like artificial intelligence, robotics, sensors, and biotechnology—and dream up technology-inspired entrepreneurial projects they hope can positively impact a billion people.

It's a daunting task to be sure, but the future belongs to the bold.

As CEO of Singularity University Rob Nail said, "We all have the ability to affect humanity. Why would we do anything less?"



Rob Nail, CEO of Singularity University



CMU-SV's Wireless Emergency Alert Featured Engineering Technology

By Emily Durham 20th June 2016 | CMU Silicon Valley



The Federal Communications Commission (FCC) recently adopted a Notice of Proposed Rulemaking that suggests updates to the current regulations concerning Wireless Emergency Alert (WEA) messages. These proposed revisions will improve the clarity and distribution of WEA messages by increasing their efficiency, reliability, accessibility, and timeliness to individuals impacted by disasters such as earthquakes, tornadoes, and floods.

The FCC's proposed updates to WEA message regulations are supported by extensive research—including research performed by faculty members at Carnegie Mellon University Silicon Valley (CMU-SV).

The FCC cited Department of Homeland Security Science and Technology Directorate (S&T) research undertaken by the First Responders Group's WEA Program, of which Carnegie Mellon faculty were a part. This research was the basis for the intended rule change, which will empower state and local alert originators to participate more fully in WEA and ensure that relevant emergency information reaches the public in a timely manner.

"The FCC report listed several proposed revisions to WEA, many of which we highlighted in our reports," said Martin Griss, principal research scientist and director of the Disaster Management Initiative at CMU-SV. "These reports were designed to improve the clarity of WEA messages (increased message length, embedded URLs), improved geo-targeting (embedded polygons, and other methods), and periodic systematic testing and training, to ensure that WEA alerts only reach those individuals to whom a WEA alert is relevant."

Former regulations had capped messages at a 90 character limit, but in order to improve the effectiveness of WEA message content, the proposed revisions includes an expansion of the

maximum character length to 360. Additionally, the revisions call for regular testing of the WEA system and proficiency training for those sending the alerts, as well as an improvement of WEA geo-targeting through a requirement that commercial mobile service providers distribute WEA messages only to geographic areas that accurately match the location affected by disaster.

The Carnegie Mellon research had several key components, each of which contributed to the FCC's proposed revisions. These components included interviews and surveys with alert originators in order to understand issues with adoption and use of WEA; the development of prototypes that allowed for testing of messages of different lengths, levels of geo-targeting, and smartphone options; development of new methods to substantially compress target polygons enabling embedding within WEA messages; experimentation of WEA alternatives with sample populations in Silicon Valley and Pittsburgh; and creation of a new overlay protocol that allows users to see a digested view of messages sent, in order to reduce confusion and increase responsiveness.

"The FCC highlights our work and the work of others that identifies finer-grain geo-targeting as a major need in improving WEA, as well as other improvements," said Griss. "This ruling will go a long way to improving WEA adoption and impact."

The research cited in the FCC's Notice of Proposed Rulemaking was performed by Principal Investigators and members of the Disaster Management Initiative at CMU-SV: Martin Griss, Distinguished Service Professor of Electrical & Computer Engineering Bob Iannucci, and Associate Teaching Professor of Electrical & Computer Engineering Hakan Erdogmus.

Learn more about the research: <http://cmtoday.cmu.edu/issues/october-2014-issue/feature-stories/text-alert/>

Optical Fiber, continued from page 4

If results are promising, Made In Space is prepared to develop larger scale optical fiber production facilities in space.

“The goal of this partnership is to combine our in-space manufacturing expertise with Thorlabs’ optical fiber expertise in order to rapidly develop microgravity-manufactured high-quality fiber and introduce it into existing and new markets.” — Andrew Rush, CEO of Made In Space

The project was one of the twelve new research agreements awarded by the Center for the Advancement of Science in Space (CASIS) announced today. CASIS, selected by NASA in 2011 to manage



the use of the ISS, acts as a gatekeeper and helps determine which experiments are allowed on the station.

Once on board, Made In Space will use their new manufacturing facility to produce at least 100 meters of optical fiber. While the promise of a superior microgravity-grown, fiber-based internet is exciting, we’ll have to wait for that initial batch of fiber to come back down to Earth next year for a true comparison.



Yuichi Yamaura is the head of JAXA international relations office, he and his team visited Ames and NASA Research Park on September 22, 2016. Meighan Haider, Deputy Director of NRP provided an overview of the partnerships and business practices followed by a visit to NRP Partner Made In Space.

DSI Interplanetary Mining Mission, continued from page 1

partner, the government of Luxembourg, announced plans to build and fly Prospector-X, an experimental mission to low-Earth orbit that will test key technologies needed for low-cost exploration spacecraft. This precursor mission is scheduled to launch in 2017. Then, before the end of this decade, Prospector-1 will travel beyond Earth’s orbit to begin the first space mining exploration mission.

“Our Prospector missions will usher in a new era of low cost space exploration” said Grant Bonin, chief engineer at DSI. *“We are developing Prospector-1 both for our own asteroid mining ambitions, but also to bring an extremely low-cost, yet high-performance exploration spacecraft to the market. At a tiny fraction of what traditional custom-built space probes cost, the Prospector platform has the versatility and ruggedness of design to become the new standard for low cost space exploration.”*



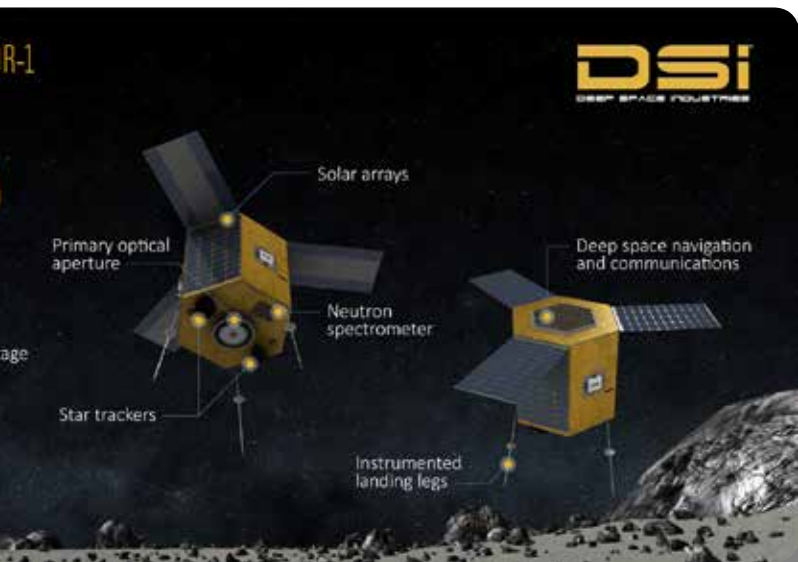
Prospector-1 Spacecraft

Prospector-1 is a small spacecraft (50 kg when fueled) that strikes the ideal balance between cost and performance. In addition to radiation-tolerant payloads and avionics, all DSI spacecraft use the Comet™ water propulsion system, which expels superheated water vapor to generate thrust. Water will be the first asteroid mining product, so the ability to use water as propellant will provide future DSI spacecraft with the ability to refuel in space.

“During the next decade, we will begin the harvest of space resources from asteroids,” said Daniel Faber, CEO at Deep Space Industries. *“We are changing the paradigm of business operations in space, from one where our customers carry everything with them, to one in which the supplies they need are waiting for them when they get there.”*

The destination asteroid will be chosen from a group of top candidates selected by the

world renowned team of asteroid experts at Deep Space Industries. When it arrives at the target, the Prospector-1 spacecraft will map the surface and subsurface of the asteroid, taking visual and infrared imagery and mapping overall water content, down to approximately meter-level depth. When this initial science campaign is complete, Prospector-1 will use its water thrusters to attempt touchdown



deployment stages. Image Credit: Bryan Versteeg / Deep Space

on the asteroid, measuring the target's geophysical and geotechnical characteristics.

"The ability to locate, travel to, and analyze potentially rich supplies of space resources is critical to our plans," continued Faber. *"This means not just looking at the target, but actually making contact."*

Along with customer missions already in progress, such as the cluster of small satellites being built by DSI for HawkEye 360, the Prospector missions will demonstrate the company's simple, low-cost, but high-performance approach to space exploration. The Prospector platform is now available to government and commercial explorers interested in developing sophisticated, yet low-cost missions of their own.

"Prospector-1 is not only the first commercial interplanetary mission, it is also an important milestone in our quest to open the frontier," said Tumlinson. *"By learning to 'live off the land' in space, Deep Space Industries is ushering in a new era of unlimited economic expansion."*

More detailed information about the Prospector program, including the Prospector-X (eXperimental) and Prospector-1 missions, and the DSI technologies that are making these missions possible, can be found on the company's website: <http://DeepSpaceIndustries.com/Missions>

Global Entrepreneurship Panel, continued from page 3

Space Portal Chief Rasky said, *"The Portal goal is to foster development of space customers and emerging space industries in order to attract investors and commercialize the space frontier. Essentially - We serve as a 'space accelerator' at the NRP."*

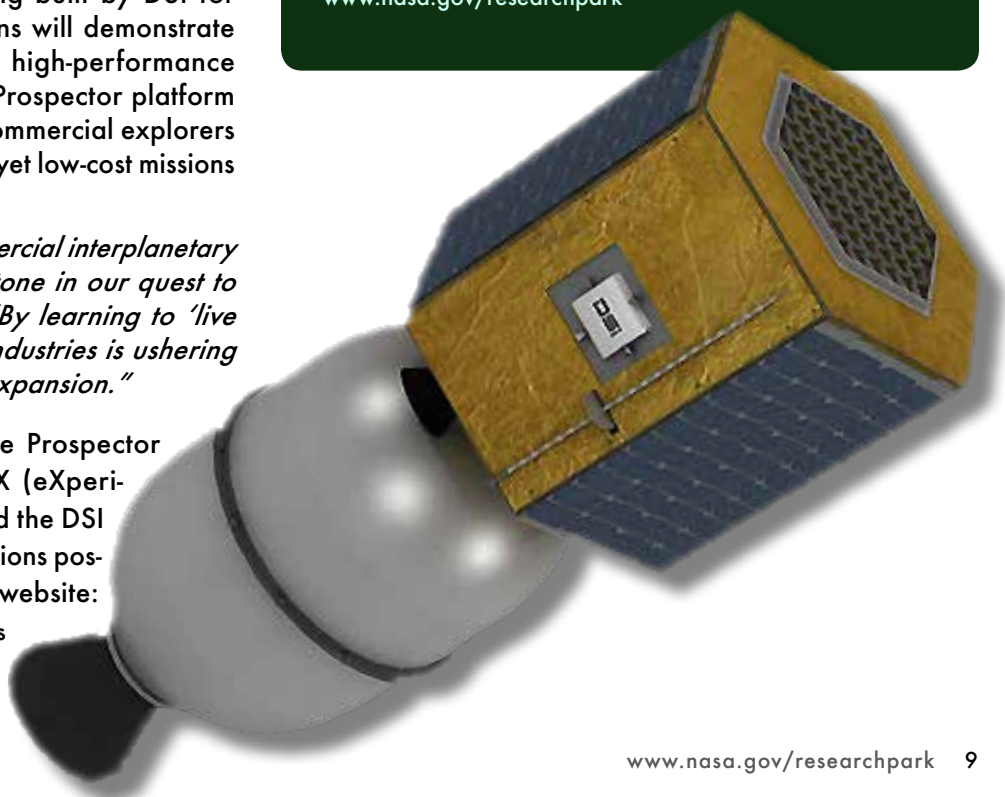
The Portal is developing several breakthrough ideas: such as using a Lego model to send pieces of spacecraft and assemble them in space and developing space "highways" to the Moon. *"It's a new era in the next 50 years, to open a new frontier resulting in jobs and a vibrant space economy,"* Rasky noted.

Rasky also discussed the Portal's innovative COTS program (Commercial Orbital Transportation Services) originated at the Portal whose ambitious goal is forging a commercial path to the Moon and Mars. The first step is "CIS Lunar Cots", he said. *"This is an economical, affordable approach to the Moon, Mars and beyond. It is an introductory dance between government and entrepreneurship. The economy needs to get beyond geography, to move the boundary to launch to the moon and asteroids. The goal is to extract resources from the Moon such as water, from a Lunar Station,"* he said.

Besides the Portal at the NRP, it fosters relationships with the Silicon Valley commercial space network including Google, Space X, Apple, the Space Frontier Foundation, Moon Express and United Launch Alliance, and other major firms.

The panel discussion was followed by an audience Q&A with questions on how the upcoming 2016 election will affect space commercialization, when to call it quits if ideas such as water in space don't pan out, and the technical feasibility of several futuristic concepts.

The panel and discussion are part of the ongoing NRP Exploration Lecture Series. Further information can be found on: www.nasa.gov/researchpark



Foundations for Modern Requirements Management

By Madeline Wigen 9th April, 2016

Carnegie Mellon Silicon Valley students learn Requirements Management using Jama

The NASA Ames Research Center in Moffett Field, nestled amongst the global headquarters of Google, LinkedIn, Yahoo and Symantec, is home to Carnegie Mellon Silicon Valley. At this campus, graduate students prepare to become the technical leaders of the Fortune 100 companies that surround them.

the term, Professor Péraire introduced the Jama solution to her class and provided an overview of the tool. Thanks in part to Jama eLearning, she quickly learned the basics of the tool to help her students hit the ground running. Students used Jama to collaborate on their term project, which involved developing an application to assist real-life local first responder teams. Students reported that the tool has helped them work in teams more effectively. One student noted: *"Jama is a great collaboration platform."*



elements of the students' projects and help them improve their work throughout the semester. She concluded: *"Overall, as the faculty, a tool like Jama provides me with an improved visibility into the students work, and also improves my ability to effectively collaborate with students outside the classroom, for both mentoring and evaluation purposes. For students, the tool reduces overhead in terms of structuring the information so they can focus on content creation and hence maximize learning."*

Interested in trying Jama in an academic setting? Sign up for a free trial and explore our free eLearning to get up and running quickly.

Learn more about how academic institutions, technology incubators and educational foundations can join Jama's Innovator Partner Program: <http://www.jamasoftware.com/partners/>



Professor Cécile Péraire teaches courses out of the CMU ECE Master Program in Software Engineering. With a PhD in software testing, she has a robust background working with the world's leading software companies.

Students weren't the only ones to benefit from the introduction of a modern requirements solution. *"I used Jama's Review Center to evaluate my students' work and provide more frequent and actionable feedback,"* says Professor Péraire. She used item-based reviews to comment on specific

In the past, Professor Péraire's classes used Word documents to write and manage requirements and used basic Kanban boards to track work. But those traditional processes didn't reflect the complex, critical work students would do after graduation. She sought out a SaaS, cloud-based solution that students could use to write, manage and trace requirements. It needed to be user friendly, so students could find value in it quickly and accomplish their work within the term. After in-depth evaluation of five requirements management tools, Professor Péraire selected Jama Software and became a member of Jama's Innovator Partner Program. *"Overall,"* she said, *"Jama was the one that performed the best and satisfied all the criteria on my list."* At the start of



Vivek Wadhwa Joins Carnegie Mellon Silicon Valley

By Adam Dove 8th July, 2016

SILICON VALLEY – Carnegie Mellon University’s College of Engineering announced that Vivek Wadhwa has joined its faculty as Distinguished Fellow at the university’s Silicon Valley campus. Vivek will be teaching courses in exponential technologies, technology convergence and industry disruption, and the new rules of innovation. He will also be working with CMU students and faculty to research the policy, law, and ethics issues of these technologies.

“Vivek is a thought leader about technology innovation and the Silicon Valley ecosystem,” said Jonathan Cagan, Associate Dean for Strategic Initiatives for the College of Engineering. *“We are excited to welcome Vivek to our campus and support his exploration of the impact of technology on society.”*

Carnegie Mellon’s Silicon Valley offers unique graduate programs in software management, software engineering, electrical and computer engineering, and venture creation that connect deeply to Silicon Valley enterprise companies and start ups. Research in cyber physical systems, wireless systems, connected vehicles and drones, security and privacy, and data analytics and machine learning contribute fundamental and actively applied knowledge, producing successful spin off start-ups along the way. Education in entrepreneurship connects local and Pittsburgh students to the Silicon Valley ecosystem.



Vivek Wadhwa, the former Triangle tech entrepreneur turned academic and author, is joining the faculty of CMU Silicon Valley

Wadhwa will also be developing a new seminar series that connects Silicon Valley’s innovators with the university’s global faculty, further bridging its Silicon Valley and Pittsburgh campuses.

About Carnegie Mellon University Silicon Valley:

The Carnegie Mellon Silicon Valley (CMU-SV) campus opened its doors in 2002, and has since grown into a vital connection between CMU’s Pittsburgh campus and Silicon Valley, while expanding the university’s degree offerings to include the Masters of Software Management, and three bi-coastal Information Technology Master’s programs. From cyber physical systems research, to privacy, data analytics, connected vehicles and more, the CMU-SV campus brings the innovative spirit of Carnegie Mellon students to the start-ups of Silicon Valley.

About the College of Engineering:

The College of Engineering at Carnegie Mellon University is a top-ranked engineering college that is known for our intentional focus on cross-disciplinary collaboration in research. The College is well-known for working on problems of both scientific and practical importance. Our “maker” culture is ingrained in all that we do, leading to novel approaches and transformative results. Our acclaimed faculty have a focus on innovation management and engineering to yield transformative results that will drive the intellectual and economic vitality of our community, nation and world.

Media contact: Adam Dove 412-268-6792 amdove@andrew.cmu.edu



GeoCosmo Honored at Singularity Summit

By: Charles Gonzales, GeoCosm

GeoCosmo Science Research Center, a new NASA Research Park partner, is honored to have won the Singularity University Summit Global Grand Challenge Award for Disaster Resilience in August 2016.

Every major earthquake is preceded by measurable pre-earthquake (pre-EQ) signals, typically days, sometimes weeks before the main shocks. GeoCosmo and its network of NASA and academic researchers have measured these bursts of precursors and have successfully forecast to within hours 22 of 22 earthquakes over the past eighteen months.

Our Mission:

Help 2 billion people.

If you are interested in speaking with us about your participation please come to our offices in Building 19, Room 1070I at NASA Research Park.



Jason Dunn The Future of Making Things in Space

14th August 2016



On August 4, 2016, Jason Dunn, cofounder and CTO of Made in Space, presented "The Future of Making Things in Space" at the Ames Summer Series colloquium held at the Ames auditorium. Jason shared Made in Space' accomplishment of being the first space manufacturing company that launched two operational 3D printers on the International Space Station and highlighted their current initiatives such as the Archinaut Program, a collaboration with Ames, that would enable in-space robotic manufacturing and assembly of large space structures; and their next big mission for growing optical fiber in microgravity (see article "Made in Space Plans to Create a Superior Optical Fiber in Microgravity" on page 4).



May 10, 2016, Mejghan Haider, Deputy Director of NASA Research Park briefed a group of MBA students from City University London on success of NASA Research Park and public-private partnerships.



On August 24, 2016 representatives from Office of Management and Budget visited NASA Ames and NASA Research Park. Janice Fried Director of NRP provided an update on rehabilitation timeline for Hangar One.

THE
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