

Monday, March 15, 2010

Trilliant CEO reveals details of strategy plus firm's biggest challenge

Wireless-networking firm Trilliant, of Redwood City, Calif, is both 20 years old and a new firm. Within the last year, pushed by its private investors, the firm strengthened its product line, overhauled its leadership and focused on growth and profitability. CEO Andy White came to the firm just last March after 28 years at GE.

The result of this dramatic transformation? "We can clearly distinguish ourselves from our competitors through our technology, and we are just about at break-even, with profitability foreseeable," White told us in an interview Thursday.

Trilliant has roots going back to the mid-'80s in the high-tech city of Granby, Quebec, Canada, where it started as Nertec, making in-meter dial-up modems that phoned utilities to report readings.

Trilliant in 2007 merged with a metering and energy-management services firm in Ontario called Ozz and while it still owns facilities in those Canadian locations, founder and former CEO Bill Vogel in 2006 moved the firm to Redwood City.

There it started working in earnest on RF mesh, the technology it used in its neighborhood-area networks (NANs) and HANs, White said.

Trilliant's most recent buy -- the May acquisition of Santa Clara, Calif-based SkyPilot Networks (SGT, [May-29](#)), a leading provider of long-range wireless mesh broadband equipment -- added WAN capabilities.

Now Trilliant pitches itself as offering the broadest range of wireless RF mesh communications in the smart

grid arena. Its main competitors are "the meter-centric guys: Elster, Itron, Landis & Gyr and Sensus," White said. Also appearing as a competitor in some big IOU bids is networking firm Silver Spring Networks, with which White said Trilliant is most directly comparable. Occasionally SmartSynch is a competitor on smaller bids, he added.

In WAN-centric bids, competitors include Motorola and WiMax firms such as Redline Communications, of Markham, Ontario, Canada, and Tropos Networks, of Sunnyvale, Calif.

Trilliant offers a WAN that provides backhaul and communications with substations and grid devices including capacitor banks, while Silver Spring

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DOE signs 7 SGIG deals, bringing total to 8

The US Energy Dept late last week signed seven more Smart Grid Investment Grant contracts, bringing the total signed to eight, DOE Deputy Press Secretary Jen Stutsman told us Friday afternoon. The US Treasury Dept declared Wednesday that SGIG awards to corporations would not be taxable income, resolving a question that had held up the \$3.4 billion program for many weeks (SGT, [Mar-11](#)). Still left in the dark are smart grid demonstration projects.

All seven of the newly signed SGIG contracts were for the full amount applied for as revealed in October when President Obama announced the selection of 100 winning projects (SGT, [Oct-28](#)). The grants are to be as reimbursements given when key milestones are reached. Energy Secretary Steven Chu a month later awarded \$620 million to 32 smart grid demo projects, to "further our knowledge," he said, "and understanding of what works best and delivers the best results for the smart grid, setting the course for a modern grid that is critical to achieving our energy goals" (SGT, [Nov-25](#)).

The Energy Dept had hoped to sign contracts with many of the chosen recipients in December.

NV Energy's is biggest

NV Energy's is the largest of DOE's smart grid grant contracts signed to date. The \$138 million matching grant will be used for the firm's statewide project, which is set to link 1.3 million electric meters across about 54,000 square miles of service territory in the next three years, Gary Smith, project director for smart technologies at NV Energy, told us in August (SGT, [Aug-14](#)). With the grant, full deployment in the ASD project will take three years, he told us at the time.

The contract with NV Energy calls for integrating smart grid technologies including dynamic pricing, customer communications and in-home networks, grid monitoring, distribution automation, distributed renewables and electric vehicles, DOE said Friday.

NStar, El Paso sign, too

The agency made final its pact with Boston-based IOU NStar, which will get \$10.1 million to

expand its automated system's "distribution automation capabilities by implementing 'self-healing' functions on the grid that will reduce the impact of outages on the system and the power quality and efficiency of the distribution grid," DOE said.

NStar means to expand "self-healing" to 1,000 from 13 circuits, Larry Gelbien, VP of engineering and head of the utility's smart grid initiative, told us in November (SGT, [Nov-02](#)).

The deal for a \$1 million grant was sealed Friday with El Paso Electric in Texas, DOE said, noting that the project will benefit customers in New Mexico. The initiative impressed Kurt Yeager, executive director of the Galvin Electricity Initiative, by incorporating "the automation capabilities into the consumer [side]," he told us in an exclusive interview in November (SGT, [Nov-10](#)). "It's focusing on breaking down the supply-demand iron curtain, if you will."

Guam Power, Wellsboro sign

DOE and Guam Power Authority, based in Hagatna, Guam, Thursday completed their pact that calls for the

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does not offer WAN, White reported. Elster, Itron, Landis & Gyr and Sensus run networks using unlicensed 900 MHz spectrum, while Trilliant's WANs, NANs and HANs use 2.4 GHz unlicensed spectrum.

"Using 2.4 GHz naturally gets you 2-1/2 times the bandwidth and with the addition of our WAN, we also offer much lower latency than our competition," White said. Using RF mesh in the WAN and the NAN allows "covering all network tiers, all devices and geographies, around mountains, from the most urban to the most rural," he added. And it is more usable outside North America than 900 MHz, he added.

Trilliant also claims to offer high security over its entire range of

networks, from wide-area to in-home -- and to use chipsets based on standards including IEEE 802.15.4 to lessen interference.

The firm's single largest customer is Ontario's Hydro One where it installed 1.1 million meters. Of those, 900,000 are now communicating reliably and 800,000 customers have migrated to AMI billing. The switchover to TOU rates has begun and 1 million meters are slated to move to such billing by year-end, White said.

Trilliant has 1.5 million meters installed and the other customers include Milton Hydro and Hydro One Brampton, both in Canada; Louisville (Ky) Gas & Electric; Connecticut Light & Power and Exelon in the US; the UK's British Gas (SGT, [Oct-27](#)), and Ireland's Electricity Supply Board. A new project is about to get underway in Burbank,

Calif; a pilot is running with Nevada Energy, and "we're in final negotiations for several deals to be announced in the next few weeks," White said.

SGIG brings munis, co-ops

Most of its bids usually come from IOUs but since municipals and co-ops won roughly 75% of the [Smart Grid Investment Grants](#), it is getting more RFPs than usual from those utilities now.

That grant program paradoxically resulted in a slowing of business last year as utilities held off purchases, waiting to see whether they could get them at half-price with an SGIG, White noted.

But now that the major hurdle of taxability has been resolved, at least for corporations (SGT, [Mar-11](#)), and the three-year deadline clock has begun ticking, "we're seeing RFPs coming in once every week or two weeks," he said. "It's a pretty busy time right now."

Trilliant produces its networking gear through subcontracted manufacturers.

It partners with meter makers while competing with them, having been certified to install its communications boards in their meters, White said.

It also partners with makers of thermostats and other in-home devices and with system integrators. Particularly strong is its relationship with IBM, with which it has a resale agreement. It also has a deal to resell gear from GE and a partnership with Cooper Power.

About half of Trilliant's employees work on engineering, design and R&D, White said. Some work to maintain Trilliant's UnitySuite and to integrate with IBM's Tivoli systems-management software.

Trilliant designs all its own communications gear and has that work about 95% complete for the North American market, White said.

Next up is doing the same for the international product line, an effort now absorbing about half the R&D team's energy. It's justified by the "phased" acceptance of the smart grid, said White. Canada came first and now most of North America is deploying. Europe is mainly "in pilot mode, where North America was two years ago," he added. The Asia-Pacific region is still in "inquiry mode," a year or two behind Europe.

One challenge White identified in running Trilliant is dealing with the varied

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utility to receive a \$16.6 million grant, DOE said. Guam Power will use it to install smart meters for all its 46,000 customers, said a local press account (SGT, [Dec-29](#)). Guam Power is set to establish "the infrastructure needed to support a two-way flow of energy and information," DOE added.

Power distributor Wellsboro Electric in Pennsylvania is set to receive \$431,600, DOE said Friday. The \$961,200 project includes roughly 2,600 Hunt Technologies TS2 smart meters headed for rural homes served by two substations. The meters will communicate via PLC, Bob McCarthy, VP of operations, told us in December (SGT, [Dec-10](#)). The rest of the firm's 6,000 customers have Hunt solid-state meters capable of one-way PLC communications, he added. Those transmit daily readings and will be replaced gradually with two-way units as they wear out.

Other 2 are cities

As we reported exclusively on March 4, the city of Glendale, Calif, was the first SGIG recipient to sign a contract with DOE (SGT, [Mar-04](#)). Glendale won a \$20 million SGIG award for AMI. The 85,000-customer initiative had already begun its rollout.

As Glendale's case showed, DOE was free to make deals with municipal utilities ahead of Treasury's tax ruling

since municipals are exempt from federal tax.

Rounding out the seven signed last week were two more municipals.

The city of Fulton, Mo, signed an SGIG contract for \$1.5 million that will help it replace all 5,000 meters in its service area with smart meters. The municipal will probably use RF mesh for communications, Darrell Dunlap, superintendent of utilities, told us in November (SGT, [Nov-16](#)). Utility-controlled thermostats and smart meters for the city's gas and water pumps were among the city's plans at that point.

Marblehead Municipal Light Dept, serving 10,000 customers north of Boston, told us in November it plans to use its \$1.3 million grant -- that it signed for Friday -- to replace all its conventional meters with AMI (SGT, [Nov-16](#)). The utility has for longer than five years been experimenting with ZigBee, Ethernet, fiber optics and BPL, it told us then. Marblehead is also set to run a pilot program "to assess the effectiveness of real-time pricing and automated load management," DOE said Friday. "This funding will [let] each customer view his/her energy usage in real time through the internet and will allow the light department to alert consumers to the price of electricity at different times, enabling consumers to make energy choices based on costs."

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factions within a utility -- for example, those interested in metering and billing, distribution concerns or consumer issues.

QUOTE OF THE DAY: Trying to get into the smart grid what each of these independent organizations wants, [those departments within a utility interested in metering and billing, distribution concerns or consumer issues] is probably the key challenge.

*Trilliant CEO
Andy White*

How does he handle that challenge? It can only be addressed at the CEO level, meeting the utility's counterpart

personally and then assigning his team to meet their analogs at each level of the utility and "making sure we've got a story that stitches together."

Trilliant is backed by MissionPoint Capital Partners, of Norwalk, Conn; Zouk Ventures, of London, England, and several smaller investors. White declined to state its total capitalization. He ran GE's nuclear business and its service businesses worldwide before coming to Trilliant but his earliest days at GE were spent installing communications systems in the Congo and Egypt.

"So the technology is very different today but it's a little bit of back to the future," he said.

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Demand response coalition reacts to FERC's latest DR draft

DR harder for consumers to grasp than wind, solar power

FERC last week released another draft of its [National Action Plan on Demand Response](#), seeking public review for the last time.

Comments through the April 8 deadline will be considered in developing the final action plan FERC is set to publish in June. The agency is required to send the plan to Congress by June 17. To submit comments, go to www.ferc.gov/docs-filing/ferconline.asp and look for the "eFiling" link. Take part in an internet-based discussion of the plan at <http://ferc.ideascale.com/>.

The latest draft doesn't look "vastly different from the staff discussion draft put out last November," Dan Delurey, director of the Demand Response Coordinating Committee (DRCC), told us Friday, as he was digesting it. The

November draft was the subject of a FERC-hosted conference (SGT, [Nov-24](#)).

The one new thing he saw in the latest draft was "more discussion of a federal agency option for implementation," and continued talk about "forming a coalition to implement the action plan." FERC doesn't name a federal agency, and Delurey declined to venture a guess.

The federal agency "would be tasked with making strategic and day-to-day decisions such as setting priorities and managing the budget" -- and it would be assisted by a panel of coalition members, "volunteer leaders from individual companies, organizations and state and local governments," said the draft. Some coalition meetings and activities could be eligible for federal funding, the action plan suggested.

Putting a federal agency in charge of implementation "is one way to go," he added. "There are good and bad

examples of agencies doing things like this. It's legitimate to talk about. I think it might be better done by the coalition truly at the lead -- a non-profit."

The DRCC was formed at the request of FERC and DOE, "to be the lead entity representing the US at the International Energy Agency," that was involved in a DR project, Delurey reminded. After that work was over, members decided more work was needed.

"The coalition in the action plan needs to be implemented as quickly as possible," he noted, to help address the sort of problems seen in Bakersfield, Calif. (SGT, [Feb-17](#)) and Texas (SGT, [Mar-09](#)) -- "not just to offset things already going on but to lay a better foundation for all that's to come."

The concepts in the action plan are "pretty basic and understandable," said Delurey. "For example, I think a communication plan like the one in this draft can go a long way to getting a general level of understanding out there. It will allow policymakers to do what they have to do to make the smart grid happen. If there's a level of understanding by customers, it translates to a foundation from which policy can be made.

"People understand wind and solar power intuitively," he added. "With smart grid, it's more important to have this kind of communication element. I don't think it's intuitive." Advancements such as time-based pricing and smart grid initiative investments "will be easier to do if this communications plan is implemented."

The "national communications program" mentioned in the draft includes three elements: a "communications umbrella," local

2 stories in 1 minute

Report predicts Japan

will spend \$56 billion: Tokyo Electric Power and nine other regional utilities may need to spend 5.1 trillion yen (US\$56.3 billion) in 20 years to upgrade Japan's power grid if a draft climate-protection legislation is made law, [a Bloomberg news story](#) quoted Tomohiro Jikihara, an analyst covering power and gas utilities for Deutsche Securities in Tokyo. The utilities would need to spend 2.5 trillion yen (US\$27.6 billion) to install batteries and the rest on smart meters and other devices to cope with the irregular current supplied by renewable energy, Jikihara said.

Hitachi reportedly starting

smart grid committee: Hitachi said Thursday it will establish on April 1 a committee designed to bring together its divisions and companies working to commercialize smart grid technology, according to private news service [AsiaPulse as cited by website TradingMarkets.com](#). Hitachi will use the panel to assemble a smart grid lineup covering electric-power systems, telecom, transport systems and electric cars, AsiaPulse said. This will let it present one-stop offerings to governments internationally, it added.

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implementation and “direct outreach to states, policymakers and partners.”

DRCC plans to hold a [national town hall meeting](#) June 23-24 to discuss the action plan. DRCC hosted its first such meeting last summer (SGT, [Jul-14](#)).

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Beacon Power hooks up second big flywheel energy storage plant

Beacon Power successfully connected a “smart energy” 25 flywheel energy storage system at a wind farm in Tehachapi, Calif, it told the press Friday. The system is part of a wind power/flywheel demonstration project being carried out for the California Energy Commission (CEC). The primary goal of the project is to show that advanced control technology with energy storage can help expand the delivery of wind energy by effectively increasing the capacity of constrained transmission facilities in the area.

Beacon Power, of Tyngsboro,

Mass, won a \$24 million smart grid demonstration project grant from DOE -- to build the firm's second 20 mw flywheel energy storage plant, in Chicago (SGT, [Nov-25](#)). Beacon CEO Bill Capp said at the time that the grant was “the most significant financial boost Beacon has ever received from the federal government,” yet DOE has yet to sign a single demo grant contract, in part since the US Treasury Dept has yet to rule on whether the demo grants will be taxable income for awardees (SGT, [Mar-11](#)).

Beacon Power, working with CEC's Public Interest Energy Research

program, the California ISO and PG&E, completed a research project and field demonstration on the value of energy storage for maintaining reliability on the grid, Energy Commissioner Jeffrey Byron said in a prepared statement. “It helped us better understand the communications and system control issues associated with integrating energy storage onto California's electrical grid,” he added.

The project will incorporate “intelligent agent” controls and Beacon's flywheel energy storage technology to show how to enable as much wind-generated power to be delivered as possible without exceeding the limits of the locally constrained transmission system, Beacon said, noting that energy storage and intelligent agent control technology have been identified as key elements of the smart grid.

CEC is funding the project. Alternative Energy Systems Consulting is the prime contractor. Southern California Edison and the California ISO are among the leading stakeholders.

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