

Reva Taps Into Reader Networks

The company says its data-filtering TAP device will help end users scale their RFID deployments while keeping reader management centralized.

By Mary Catherine O'Connor

Oct. 19, 2005—[Reva Systems](#), a startup that develops solutions for managing networks of RFID readers, has announced its first product: the Tag Acquisition Processor (TAP). Designed to act as a central command post for numerous networks of RFID interrogators (readers), the TAP is a rack-mountable device that plugs into networks of interrogators and the user's local area network (LAN). The TAP filters and aggregates tag reads before sending the tag data to software applications running at the enterprise level.

Users can configure interrogators linked to the TAP through an interface called the management console, a Java-based program that comes with the processor and can be accessed either locally or remotely. Reva Systems' CEO and cofounder, Ashley Stephenson, says the TAP supports readers from all major RFID reader manufacturers, including [Alien Technology](#), [Intermec Technologies](#), [ThingMagic](#) and [SAMSys](#). He says Reva has tested the TAP with up to 100 readers, but that it's impossible to say exactly how many the device can support because the amount of data it processes at any given moment is a function not only of how many readers are linked to it, but also of how many tags those readers are sensing. Users will likely begin deployments with a single TAP processor, then add more processors as the number of readers and tag reads grows.

"As RFID matures, there is this need for what we call the RFID network infrastructure layer, that will [centrally] operate the readers at the facility level and deliver the RFID data to the software-based integration and application environments that consume that data," says Stephenson. "We don't believe you need a separate server and middleware at each facility."

Reva says its TAP will benefit users by enabling them to configure, manage and monitor readers by means of a centralized tool instead of device management software installed at each facility. Reva says the TAP could also lower deployment costs by allowing end users to purchase low-cost readers. A TAP could serve as a conduit for RFID data, sending tag reads to various applications for analysis, thereby reducing the need to purchase higher-cost readers with onboard processing power and applications. While these highly intelligent readers do have value in some applications, Stephenson says, they are not needed at every read point. "Distributing business logic to the dock door doesn't always makes sense," he explains.

The TAP links to RFID and supply chain software through standard interfaces, such as application-level events (ALE), EPCglobal's data standard that directs how EPC data is collected and filtered (see [EPCglobal Ratifies ALE Software Standard](#)). It also utilizes structured query language (SQL) for handling database queries, and Java messaging service (JMS) for sending messages about read events to enterprise software applications.

Reva is developing application-specific interfaces that will allow users to send data to these platforms through

the TAP. It has already completed and tested a standard interface between the TAP and SAP's Auto-ID Interface (AII), an RFID middleware that routes data from readers to applications. The test involved the transmission of a large quantity of passive RFID tag data to SAP AII. This data was also sent to the SAP NetWeaver integration and application platform, and the mySAP enterprise resource-planning platform.

Reva says it is currently working with other application providers, including TIBCO and SeeBeyond, to develop interfaces between TAP and their enterprise platforms. Accenture and Hewlett Packard are both currently testing the TAP device, as well.

Since July, Accenture has been using the TAP to manage its network of RFID readers deployed at its Innovation Center in Murray Hill, N.J. "We selected Reva to support the facility because Reva's TAP fits nicely into the stack as a network play," says Matthew Wylie, senior manager for Accenture. "We did not have to use any middleware for our center."

At its Innovation Center, Accenture displays RFID and other technology its clients are using to improve business processes. Approximately nine readers, from different manufacturers, are linked to the TAP at the Innovation Center, Wylie says. In order to provide redundancy in the event that the processor fails, Accenture is also running a secondary TAP that supports the same bank of readers. The TAP filters the tag reads in accordance to business logic that Accenture established in the TAP management console.

The console can be used to track the last known location of a tag by associating the interrogator (reader) that sensed each read. To map the locations of the readers and their antennas, users can upload digital layout images of their facilities, then build out a map of the readers within each layout, using the console software. This mapping tool will also send alerts to users when its business logic says readers might interfere with each other based on their locations relative to each other, or to other devices within the facility.

Wylie says he advises Accenture clients to consider using the TAP to handle their growing networks of readers as they move from initial RFID pilots to wider deployments. "There hasn't been anything like this device [on the market] up until now," says Wylie.

But at least one software solution that plays a similar function to the TAP has been released. In June 2004, ADT Security Services, a unit of Tyco Fire & Security, introduced Sensormatic SensorID Device Commander (see New RFID Reader Management App). The Device Commander software, however, does not link directly to the user LAN and can support only up to 50 interrogators.

Reva Systems, based in Chelmsford, Mass., is actively working with EPCglobal to develop a standardized communication protocol between readers and middleware, Stephenson says. EPCglobal calls this Reader Protocol 1.0. Reva authored a similar protocol, the Simple Lightweight RFID Reader Protocol (SLRRP). Earlier this year, the company submitted it to both EPCglobal and the Internet Engineering Task Force (IETF), which develops standard Internet operating protocols such as TCP/IP. Stephenson says EPCglobal has since combined the SLRRP protocol language into its reader protocol standard development. Once a standard protocol is established, it replaces the proprietary code TAP currently uses to talk to readers from different manufacturers. Companies creating EPC RFID interrogators can also embed this language into their devices.

The TAP device is available now and costs \$9,995.

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