# GIMS – GENI Instrument and Measurement Systems

High-Speed Traffic Capture Integrated With ProtoGENI (GEC10 Update)

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ABSTRACT
GIMS is a high-speed traffic capture system for GENI. Our system integrates capture functionality with ProtoGENI via modifications to the Reference Component Manger (RCM). System fuctionality has been expanded in a number of ways since our demo at GEC9, including real-time experiment statistics, enhanced capture options, and enhanced testing and debugging features.
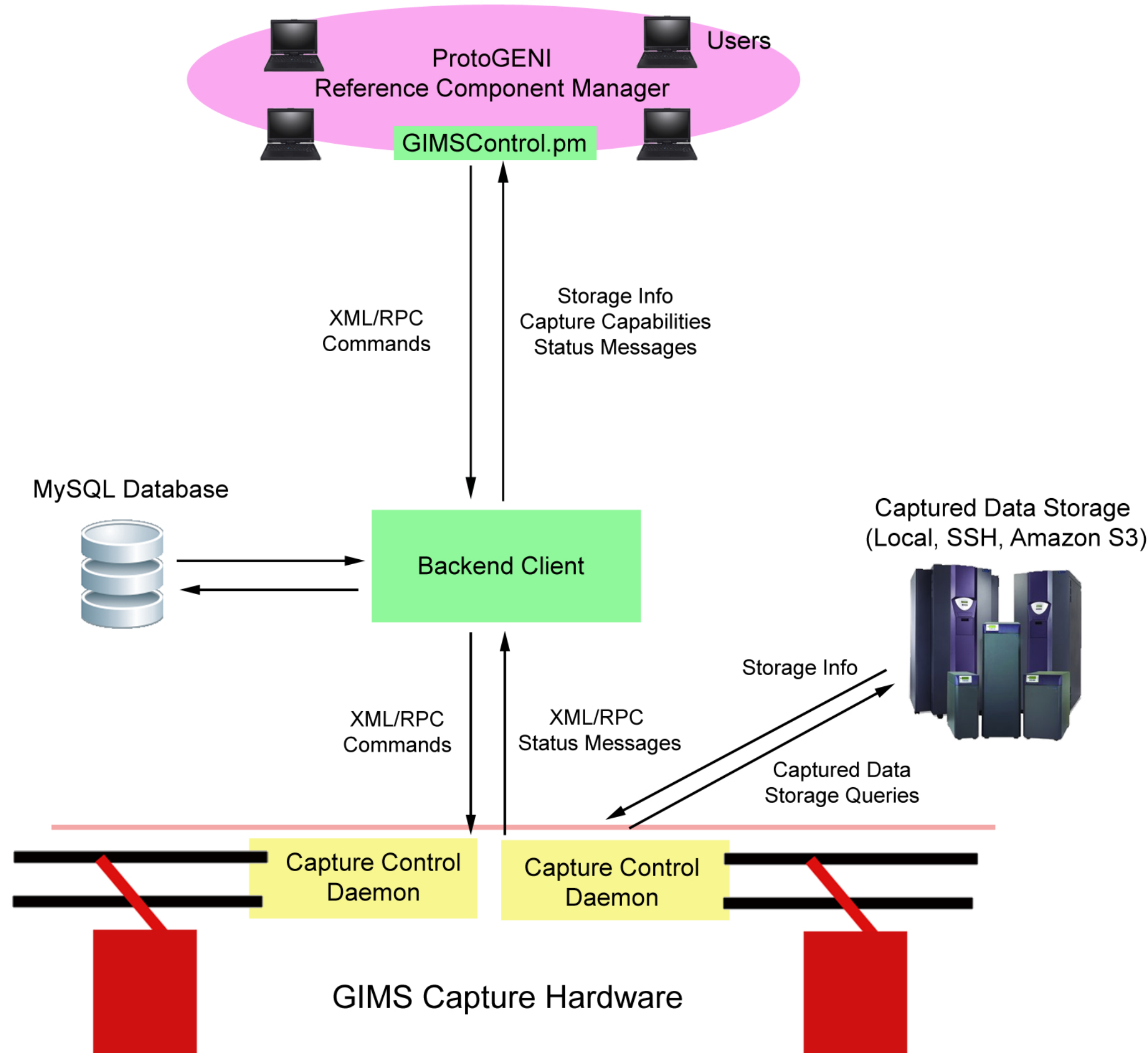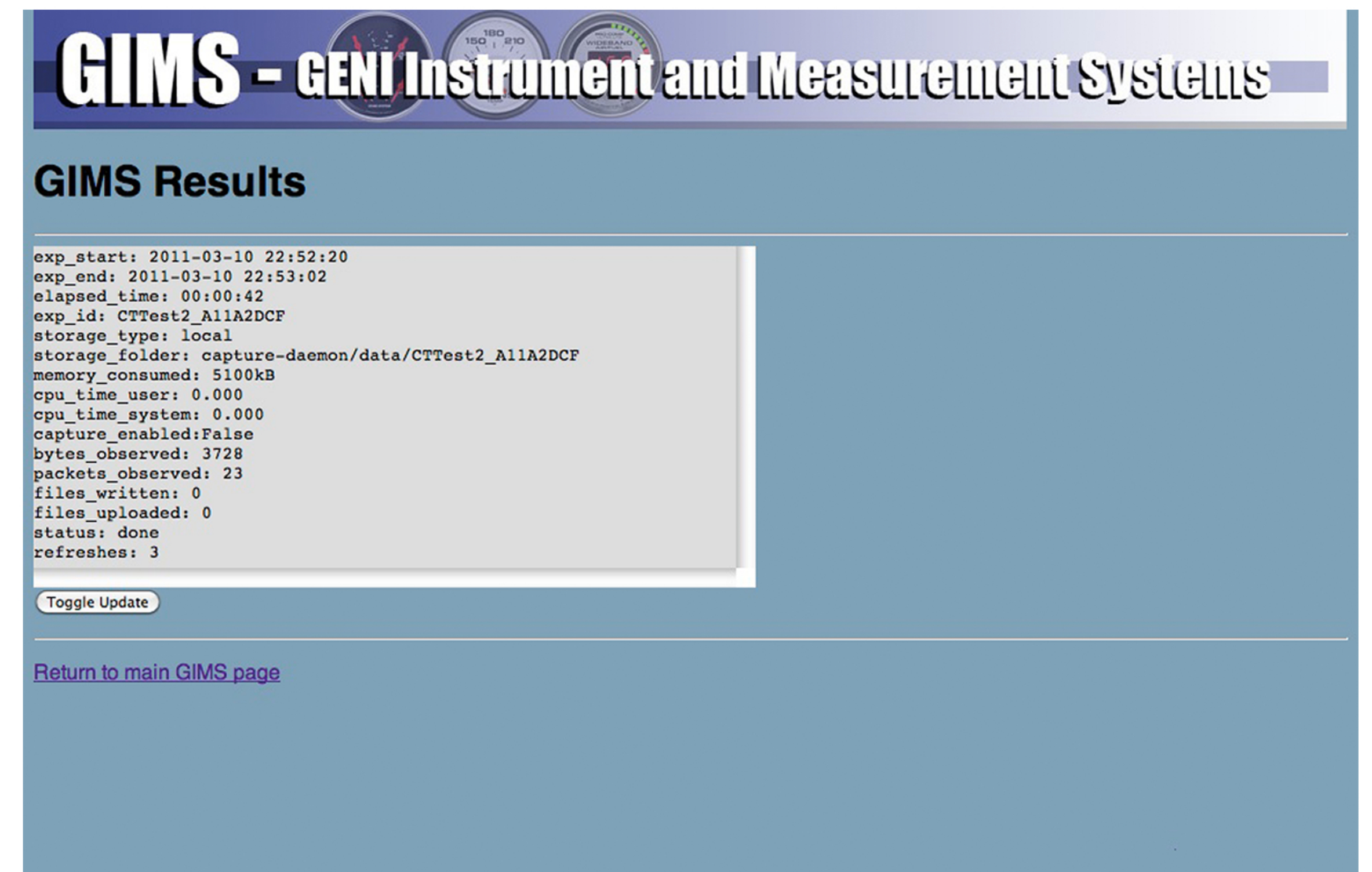
Control logic modifications since GEC9:

- Integrated capture statistics & updates into experiment timeline.

- Enhancement of Capture Pause and Capture Restart capabilities.

- Enhanced user experience by allowing GIMS system results to be passed through to ProtoGENI command-line via extension of ProtoGENI response objects.
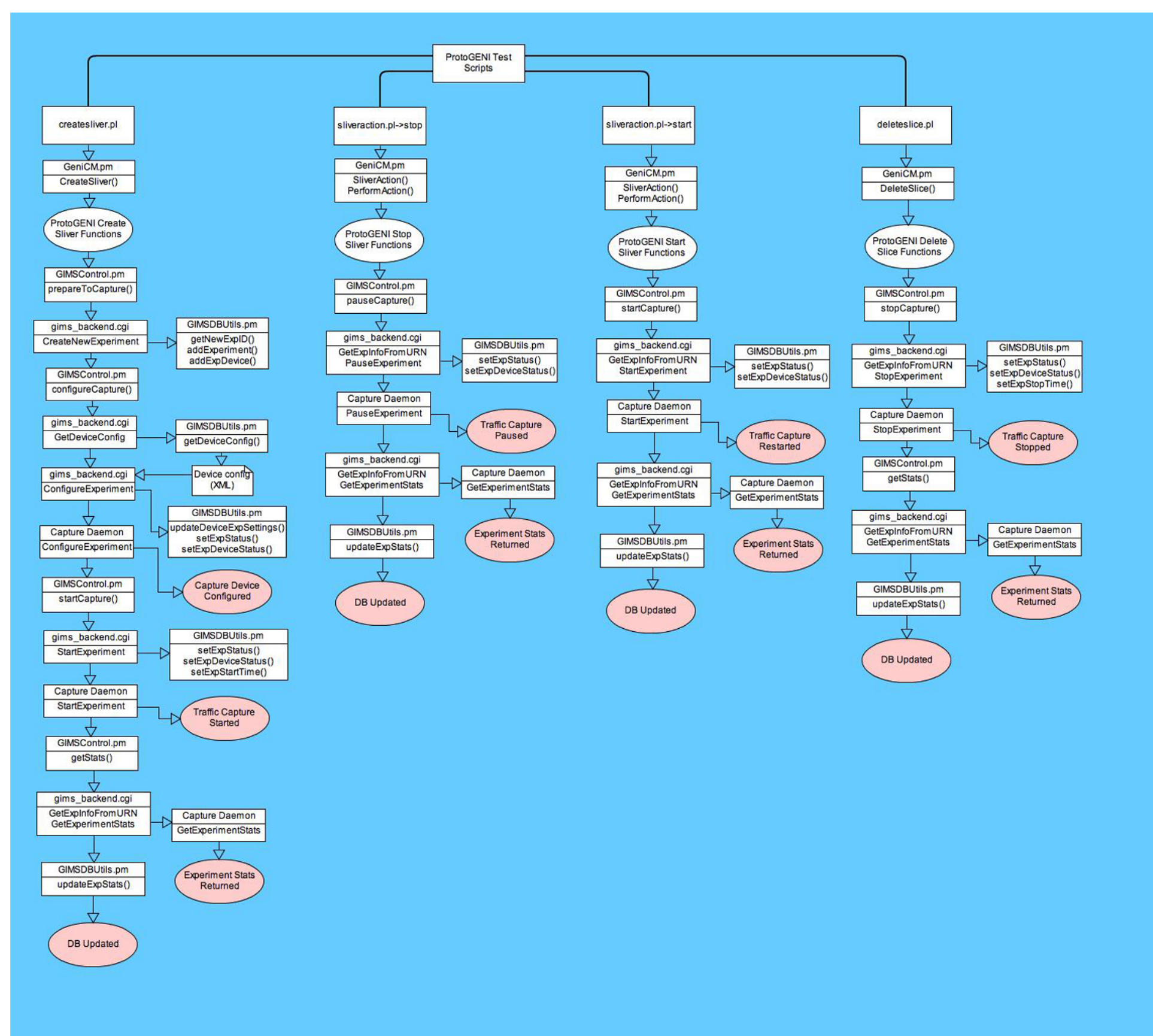

Web-based results page for real-time monitoring of experiments and post-experiment analysis (with AJAX functionality for non-disruptive information refresh). A new user page with helpful links and documents was also created.

Capture-side modifications since GEC9:

- Introduced statistics gathering capability for user display.

- Introduced new XML/RPC call for explicitly testing experiment storage.

- Through testing and code reviews added significant exception handling capabilities to storage controller daemon.

- Test suite significantly expanded for regression testing on all back-end storage components.

- Expanded capture metadata to match evolving GENI standards.
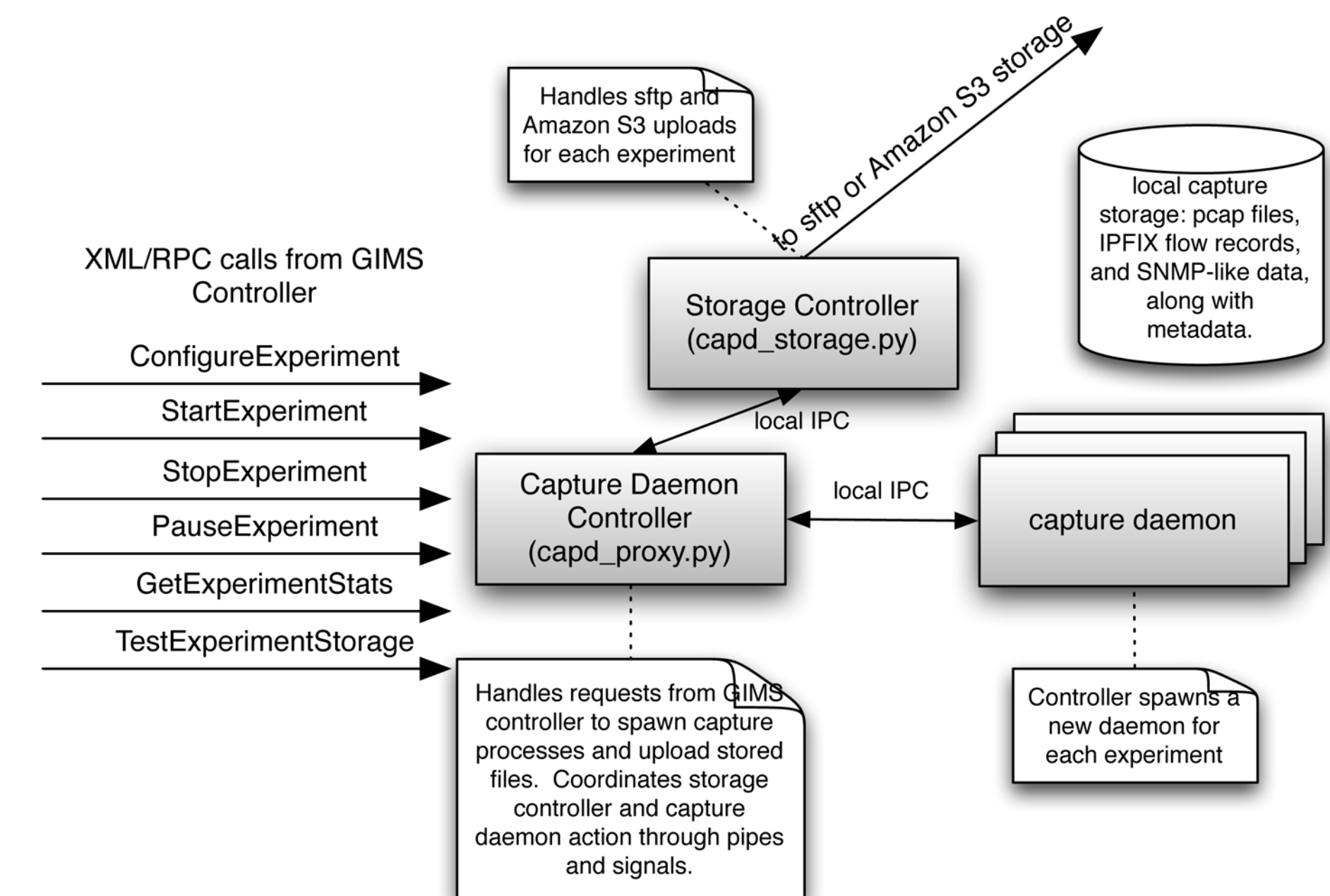
Infrastructure has also been improved. We have two sensors which can be manually switched to monitor an experiment on the Schooner testbed, or either of the two external links (Kansas City and Chicago).