A new software framework specifically designed for remote FTIR observation.

Ch. Servais, O. Flock, Ph. Demoulin.
Principal Goals

• Provide remote control (local or distant) of experimental data acquisition;
• Control multiple instruments with a single observer;
• Control multiple sites with a single observer;
• Must be optimized for FTIR or other acquisition work requiring close supervision.
Wishlist (1)

- Client-Server open architecture. Must accept new functionalities as plugins.
- Work on very low to high bandwidth internet connections.
- Use limited number of ports to ease administration.
- Accept unlimited number of simultaneous clients with different privileges.
- Administrators must be able to help remotely observers.
- Use XML configuration files, no tricky “regedits”.
- Strong protection against attacks. Hardware must be safe.
- Must control an arbitrary number of cameras: rotation, remotely adjustable exposure and orientation, wide range of compressions & frame rates, quick capture of images and movies to keep track of events.
- Optional timestamp can be included in video streams.
- Two cameras must remain visible at all times.
- Provide audio monitoring including capture to help debugging.
Wishlist (2)

- Client must work on a moderate class laptop with WinXP (may be ported to Linux later).
- Client must accept 1024x768 pixels screens and still leave room for the taskbar.
- Provide communication channels between plugins.
- Servers must be very stable.
- Installation of client application must be easy.
- Keep track of all important events in the servers Windows event log.
- Display events with timestamp in a dialog area always visible on the client application.
- Fast action icons to respond to events requiring prompt action.
- More...
General Services
Interprocess Connections, Graphic Services, XML Configuration, Logging, credentials and encryption, Alerts, etc...

Instrument 1
- RPCTRL Plugin
- Acquisition Plugin
- Suntracker Plugin
- SuntrkLid Plugin
- Meteo Plugin

Instrument 2
- RPCTRL Plugin
- Acquisition Plugin
- Telescope Plugin
- Dome Plugin

Instrument n
- RPCTRL Plugin
- Acquisition Plugin
- Suntracker Plugin
- SuntrkLid Plugin
- Meteo Plugin

Camera 1
- Plugin (Permanent)

Camera 2
- Plugin (Permanent)

Sound
- Plugin (Permanent)

Internet
Conclusions

• This framework should greatly ease remote control of multiple FTIR instruments;
• A single observer may simultaneously control multiple instruments located at different sites;
• It is secure;
• It is designed for difficult observation sites;
• It is applicable to future instruments and accepts a heterogeneous instrument farm;
• New plugins and services are in development to control new functionalities.