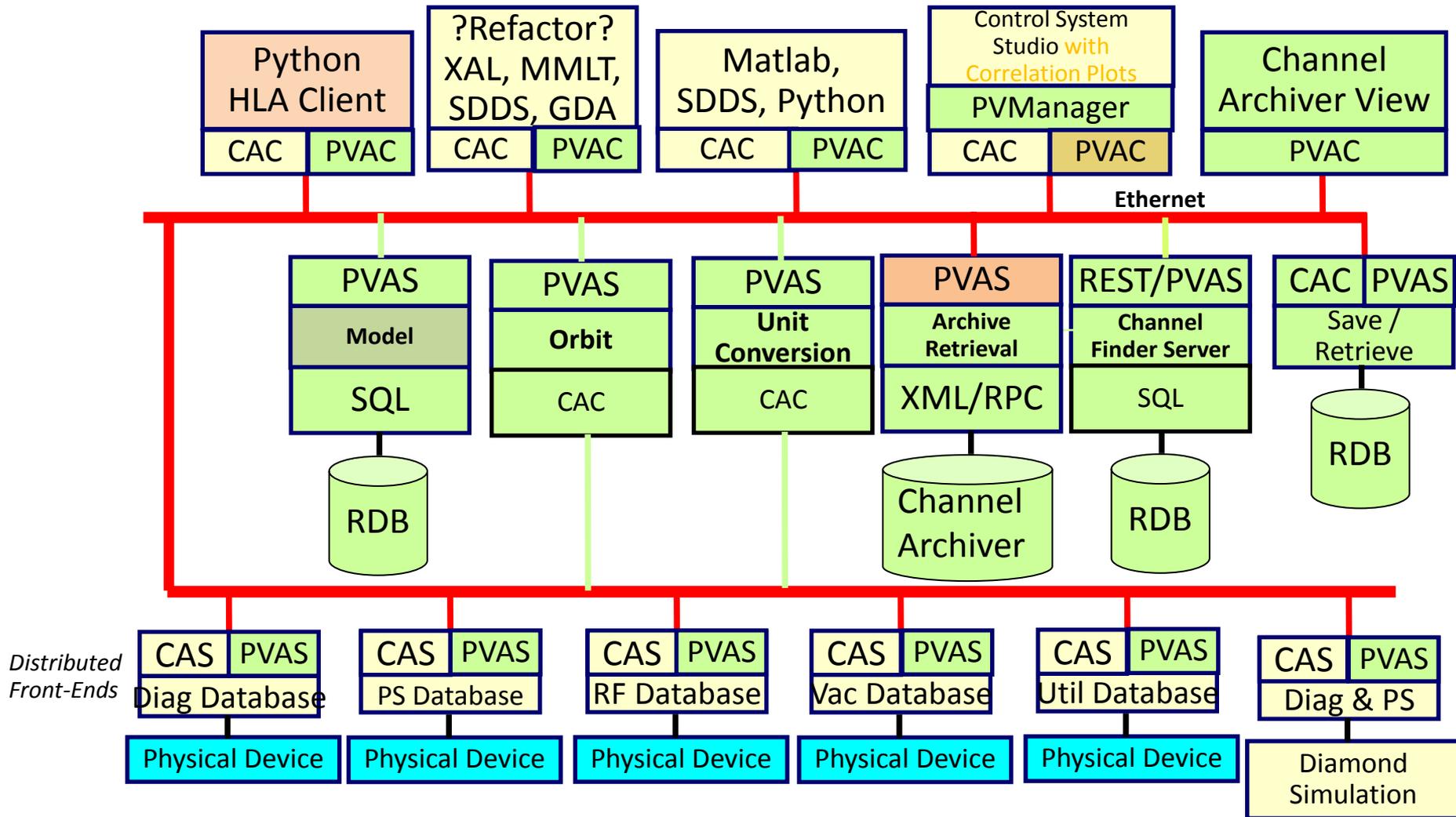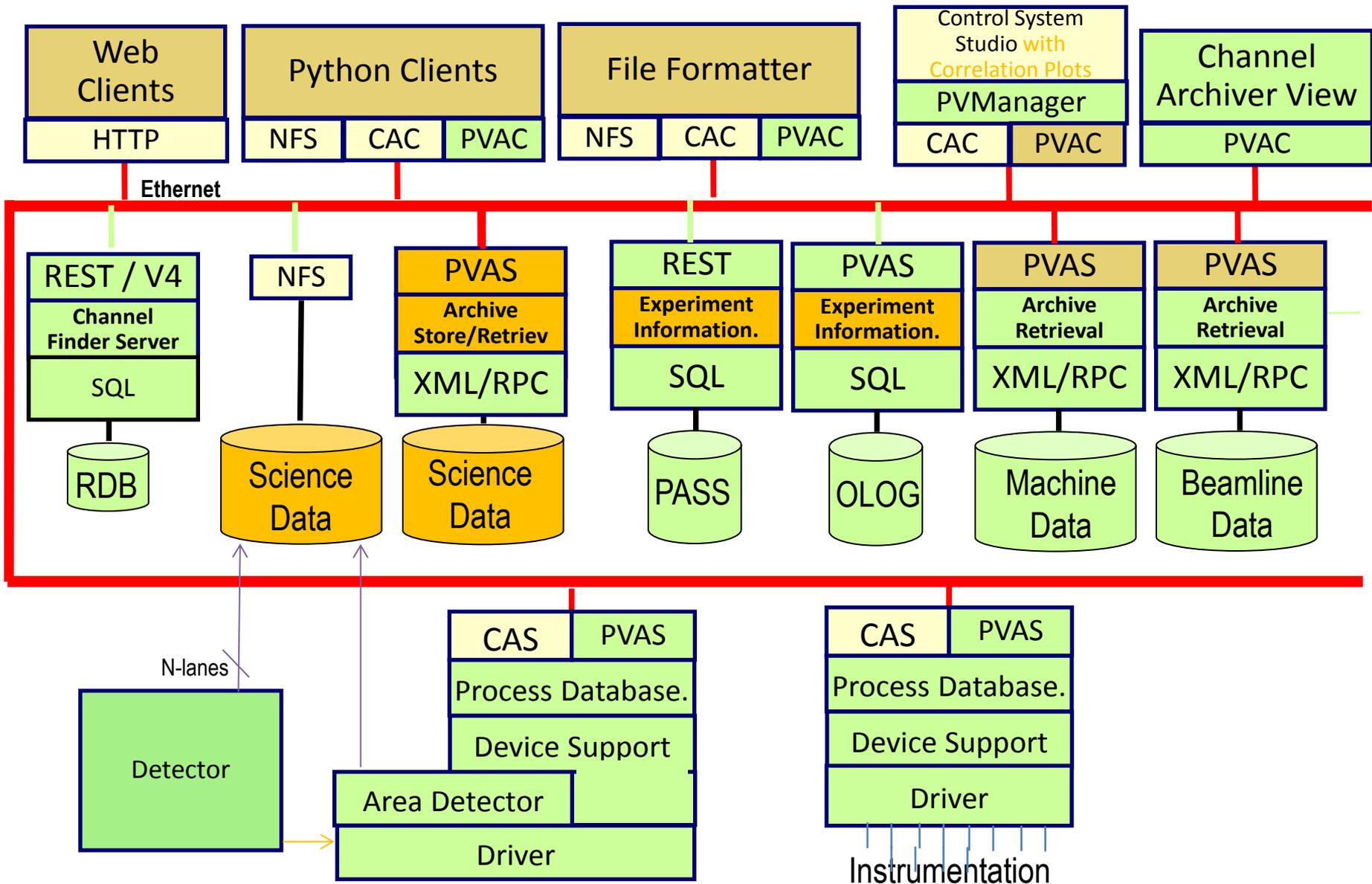# V4 Status and Workshop Report

CSS, DISCS, an V4 team

V4 for Machine Control and Studies

V4 for Experiment Control / DAQ/ UI

Organizational

- V4 development team is developing all of the V4 infrastructure for PVData and Communication, compatibility with V3, Normative Types, and General Services

- Control System Studio is developing an integrated operator environment in an integrated product.

- DISCS is developing RDB applications over a full range of control requirements.

Organizational

- V4 development team: Marty Kraimer, Matej Sekoranja, Nikolay Malitsky, Guobao Shen, David Hickin, Timo Korhonen, Bob Dalesio, Andrew Johnson, with Greg White as team lead.

- Control System Studio: Gabriele Carcasi, Kunal Shroff, Kay Kasemir, Xihui Chen, with Eric Berryman as team lead.

- DISCS: Has a host of developers working on at least 17 domains with Vasu Vupala as team lead.

- Developers meetings will proceed as joint development meetings with a nominal 4 months frequency that will rotate between the developer's sites.

Normative Type Progress

- Types in use are: all NT Types that support DBR Types, NT_Table, NT_Image (areaDetector Support), Multi-Channel Array, and NT_Variant Array.

- Unions are supported now and this improves the implementation of the NT_VariantArray. This type is a collection of heterogeneous types that can be scalars or vectors. MASAR needs to be refactored to use this implementation.

- NT_NDArray is defined and will be prototyped in the experimental area for delivering large multidimensional arrays of coordinates and binned data.

Highlights

- Developments in the three areas are being integrated and deployed at member labs.
- PVAccess has started to add multicast.
- V4 and CSS Release methods to support continuing development when the release cycle begins and to harden a release with bug fixes.
- Multicast implementation is started. This uses a topic name for listeners.
- Working to Improve monitor performance to minimize header data.
- Access security is needed from DISCS group for PVAccess security and to complete Channel Finder as a V4 service.
- Fast array support in the V3 IOC to support large data sets.
- Replace XML RPC
- Will standardize on CAJ – pure Java. Hardening is being addressed.
- Many of the NTTypes are mapped to Vtypes in PVManager for V4 and CSS integration.
- Deployments into production environments at NSLS II and FRIB are hardening the developments in all three areas. Many of the applications are in full production.

Conclusions

- There is a strong and active development team in these three areas that is coming together to bring middle layer services that will be applied to physics and experimental control and data acquisition.
- The underlying performance and flexibility that has been created by Marty Kraimer and Matej Sekoranja has provided a strong base for the development of these new middle layer services.
- The next 18 months will see many of these deployments go into production. During this phase, the applications will harden and move to production quality.
- If you are interested in helping to develop in any of these areas, there are a lot of opportunities to get involved.