

# ACCELERATOR

Threefold Integrated Network Environment



# CONTROLS

# Status of a versatile Video System at PITZ, DESY-2 and EMBL Hamburg

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The market for industrial vision components is evolving towards GigE Vision (Gigabit Ethernet vision standard). In recent years, the usage of TV systems and optical readout at accelerator facilities has been increasing. The outlined Video System, originated in the year 2001, has overcome a huge evolution over the last years. Being real-time capable, lossless capable, versatile, well-documented, interoperable, and designed with the user's perspective in mind, use cases at PITZ, HERA-e and DESY-2 (with an eye toward PETRA III) at DESY in Zeuthen and Hamburg as well as the EMBL Hamburg have been implemented to great success.

The wide use range spans from robotics to live monitoring up to precise measurements. The submission will show the hardware and software structure, components used, current status as well as a perspective for future work.

## A robust fundament

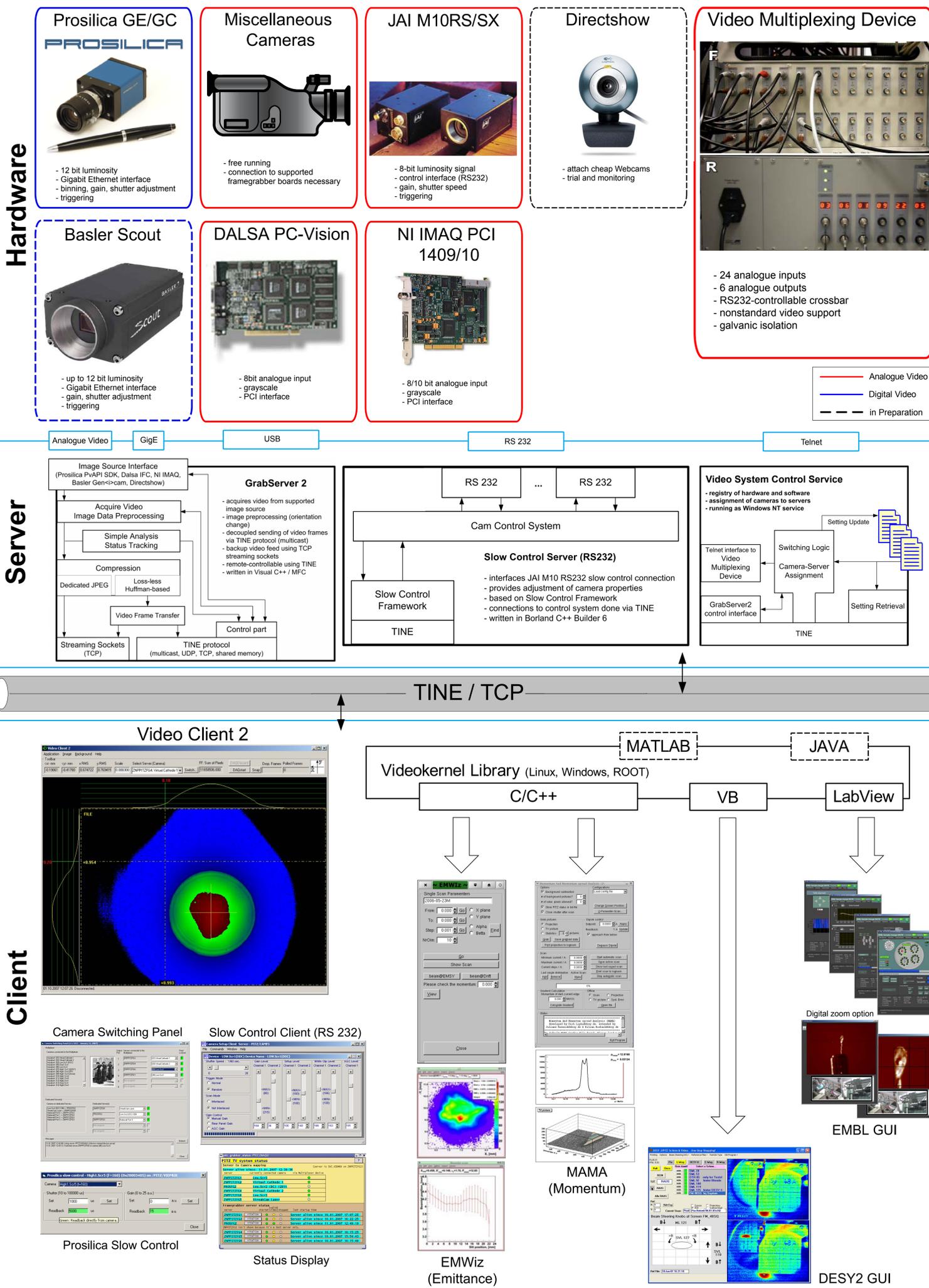
The scope of the server side is to acquire raw images from supported hardware, to provide a structured way to access and control the hardware and to provide image streams for client side.

## What you steer is what you get

The constraints on data transport are lossless transfer and real-time capability. This broadens the use range of the Video System from simple live monitoring up to precise, lossless measurements. In case multiple clients are connected to the same image source, network bandwidth is preserved by taking use of advanced TINE protocol data transport capabilities like multicasting.

## Extension is in your hands

On client level, the Video System provides the user a standard set of applications to start work with. For advanced usage, users are encouraged to write their own clients using the provided Videokernel library. By having this well-documented and easy to use interface currently available for Linux, Windows, ROOT, Visual Basic and Labview, users have created various clients for dedicated purposes.



Having a Video System that fits multiple purposes, is easy to use and to extend was a key point on successfully exporting it from PITZ to other accelerator sites like HERA, DESY-2 and EMBL Hamburg.

Future fields of activity are easier integration of new hardware and enhanced co-operation at software level. Creation of a Video Transport Layer in order to exchange and reuse software components in heterogeneous TV System environments is a chance to broaden flexibility, extend use-cases and ease co-operation.

