A Beam Image Server For TTF2

L.Catani

PCaPAC 2002

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(why we keep on using LabVIEW)

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About

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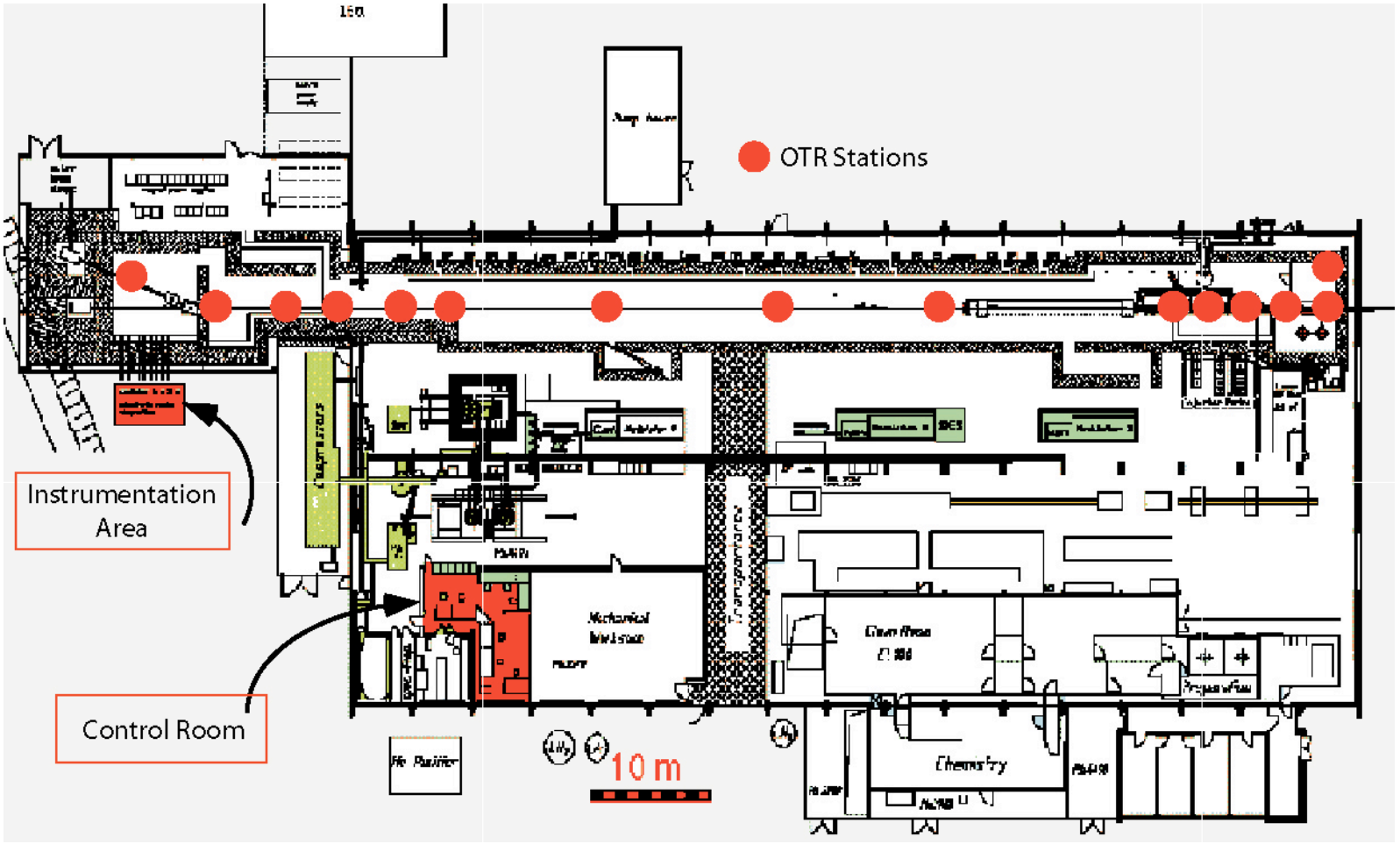
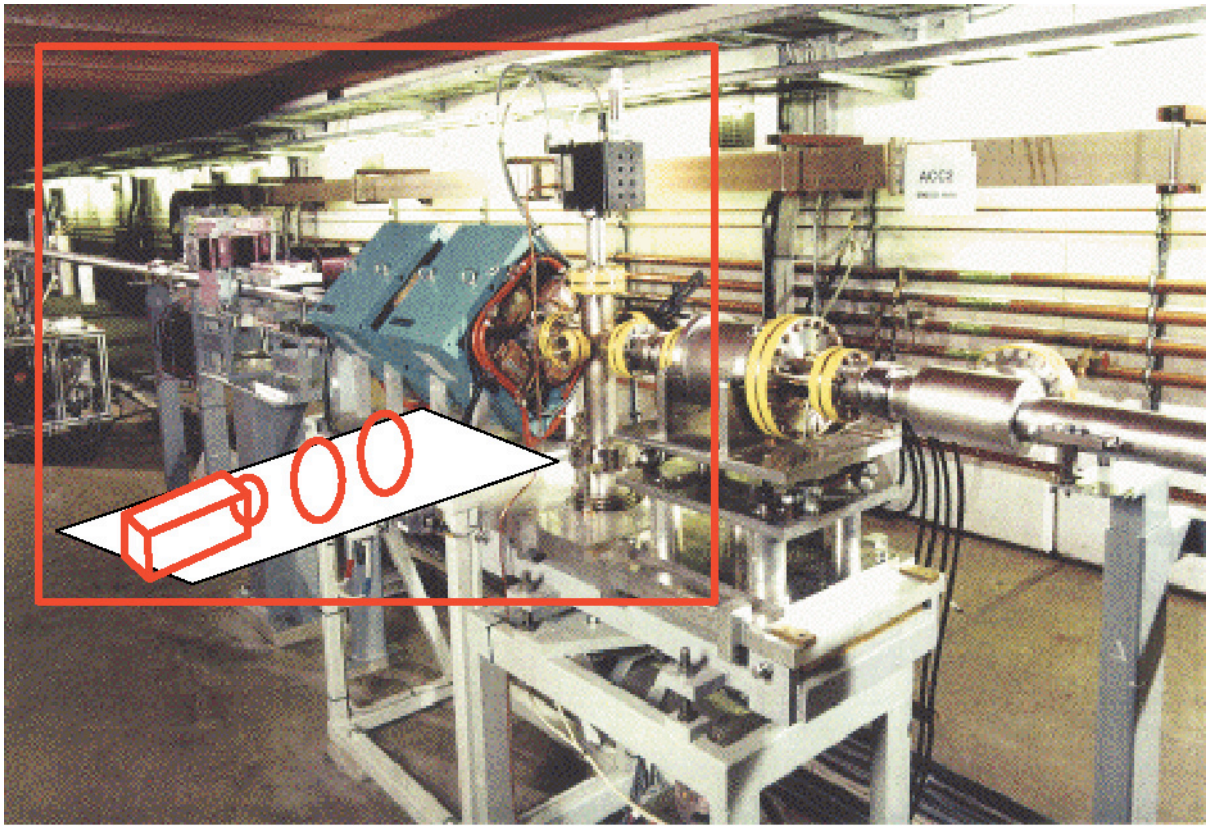
- software porting to different platforms
- integration of new functionalities as the development software (LabVIEW™) provides new features

TTF Layout with OTR Stations



OTR Station @ TTF



TV Camera + lenses + filters all of them with remote control

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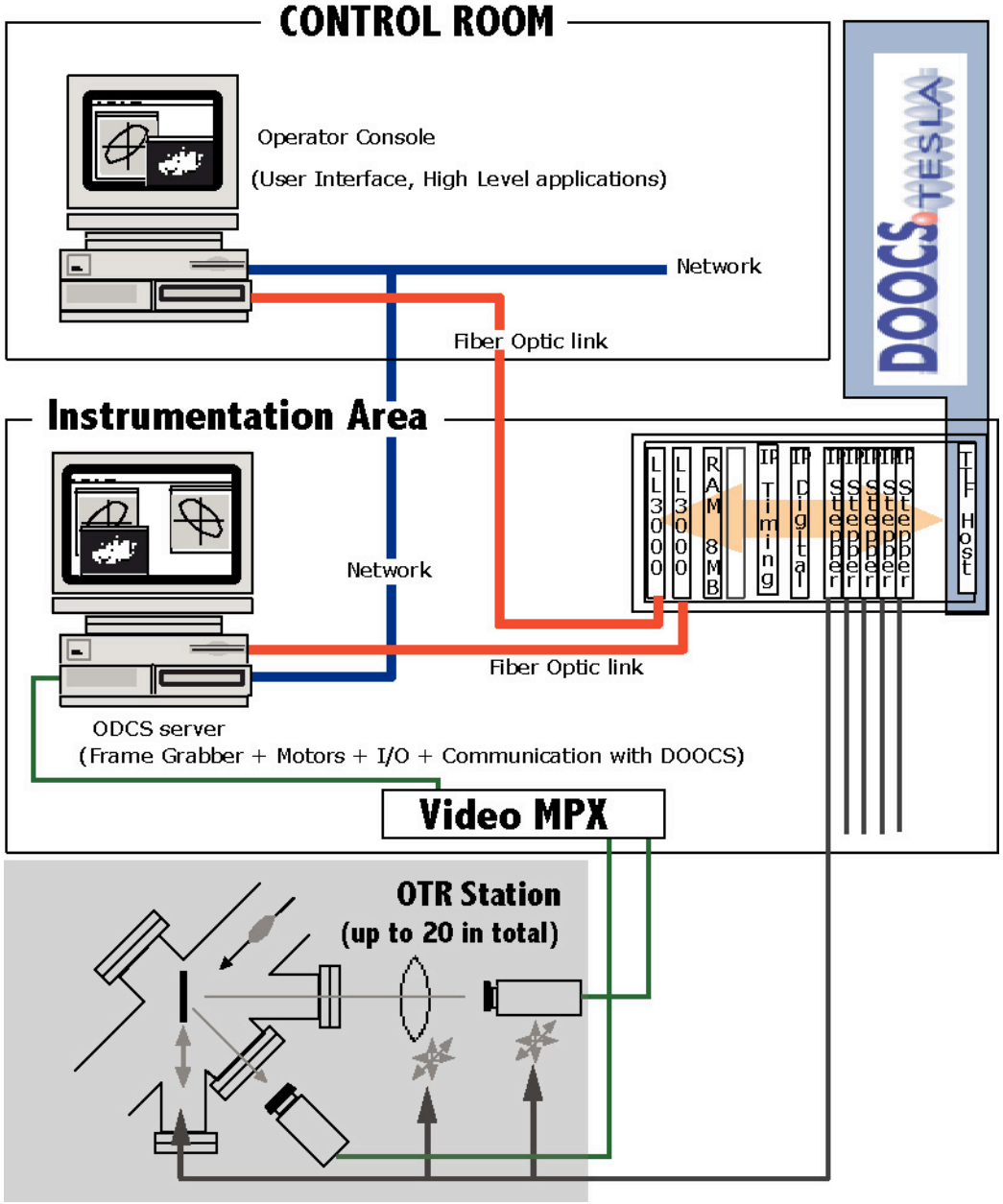
- some analysis software already developed

ODCS v.1 1995 (see PCaPAC99)



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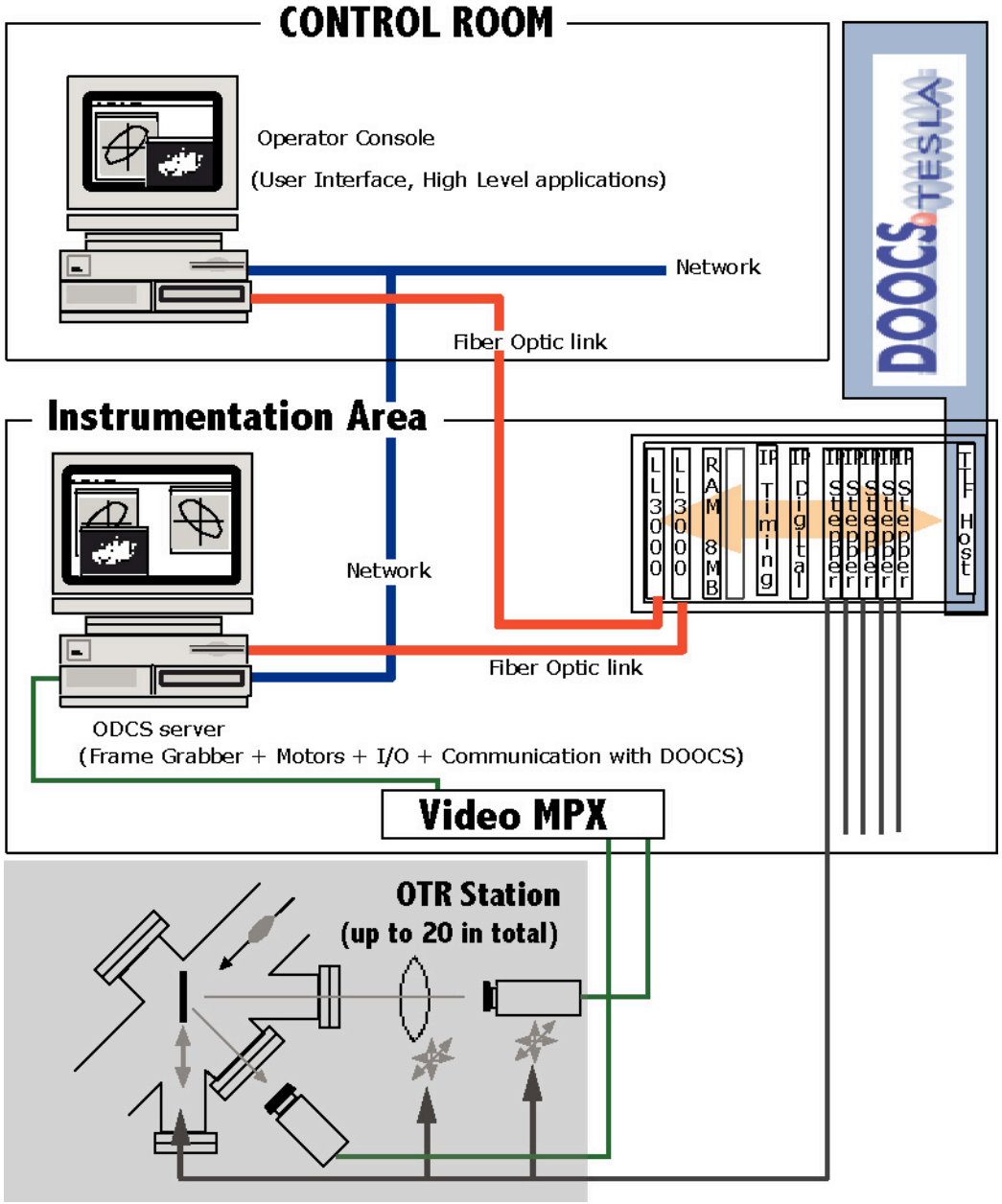

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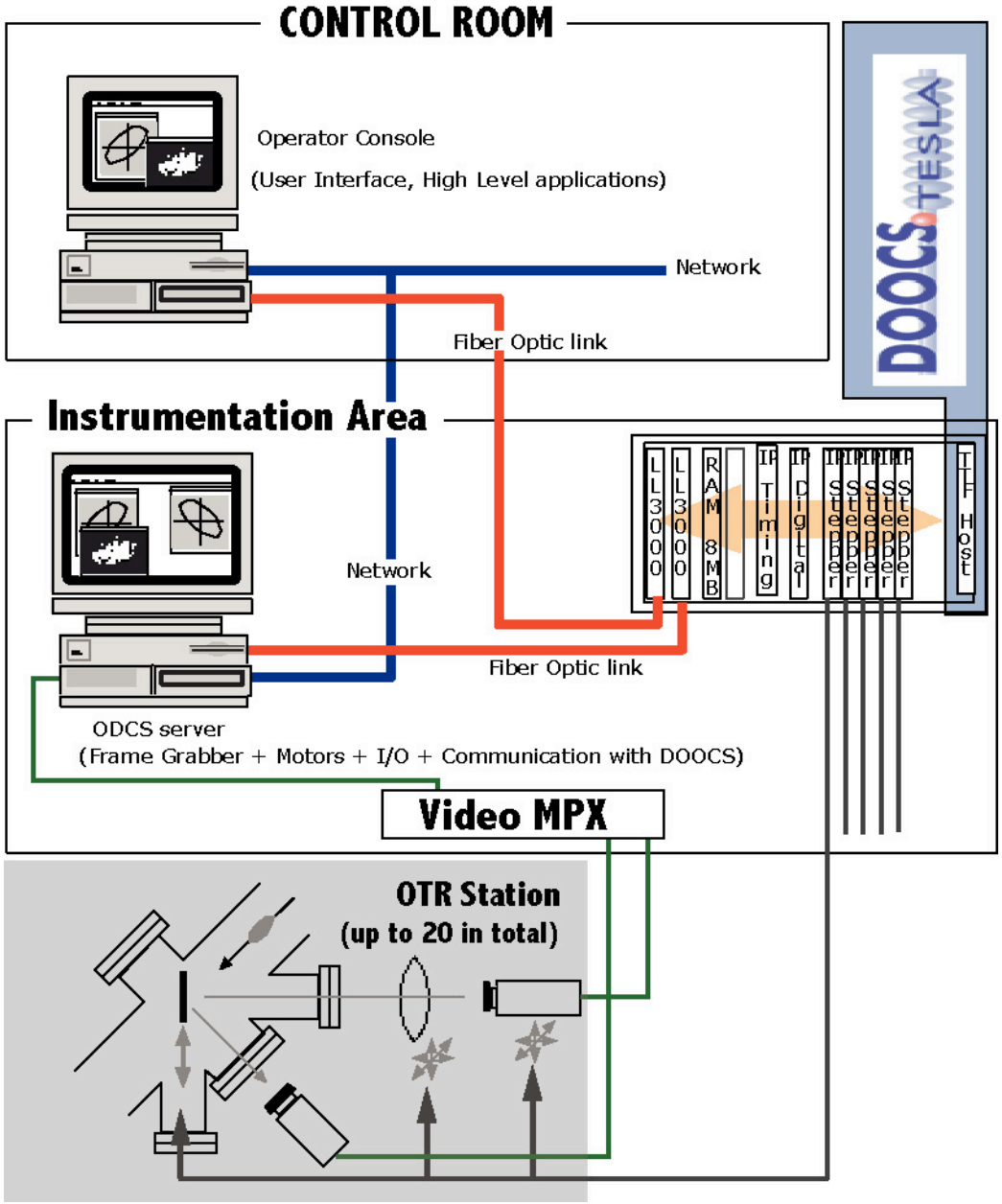

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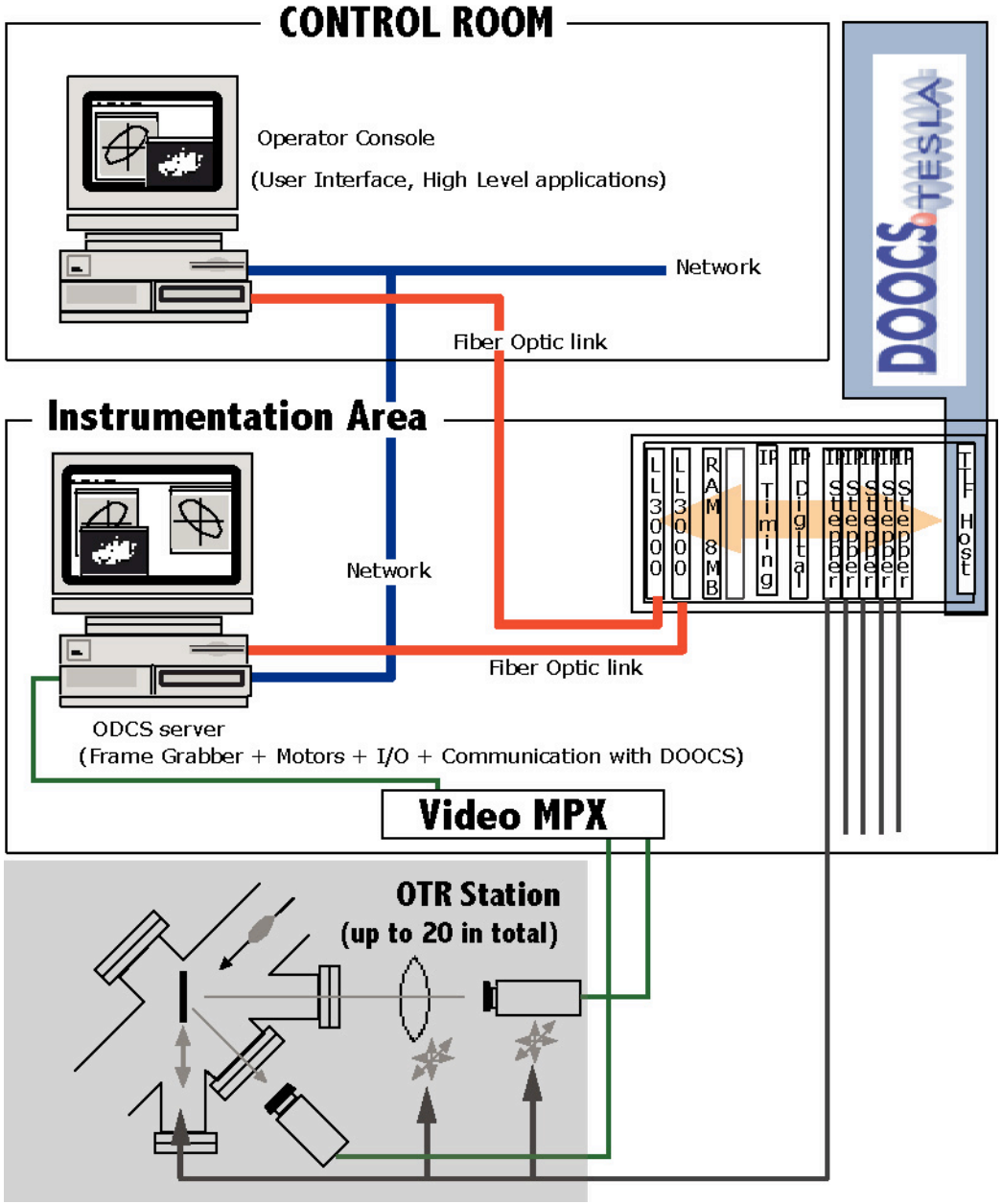

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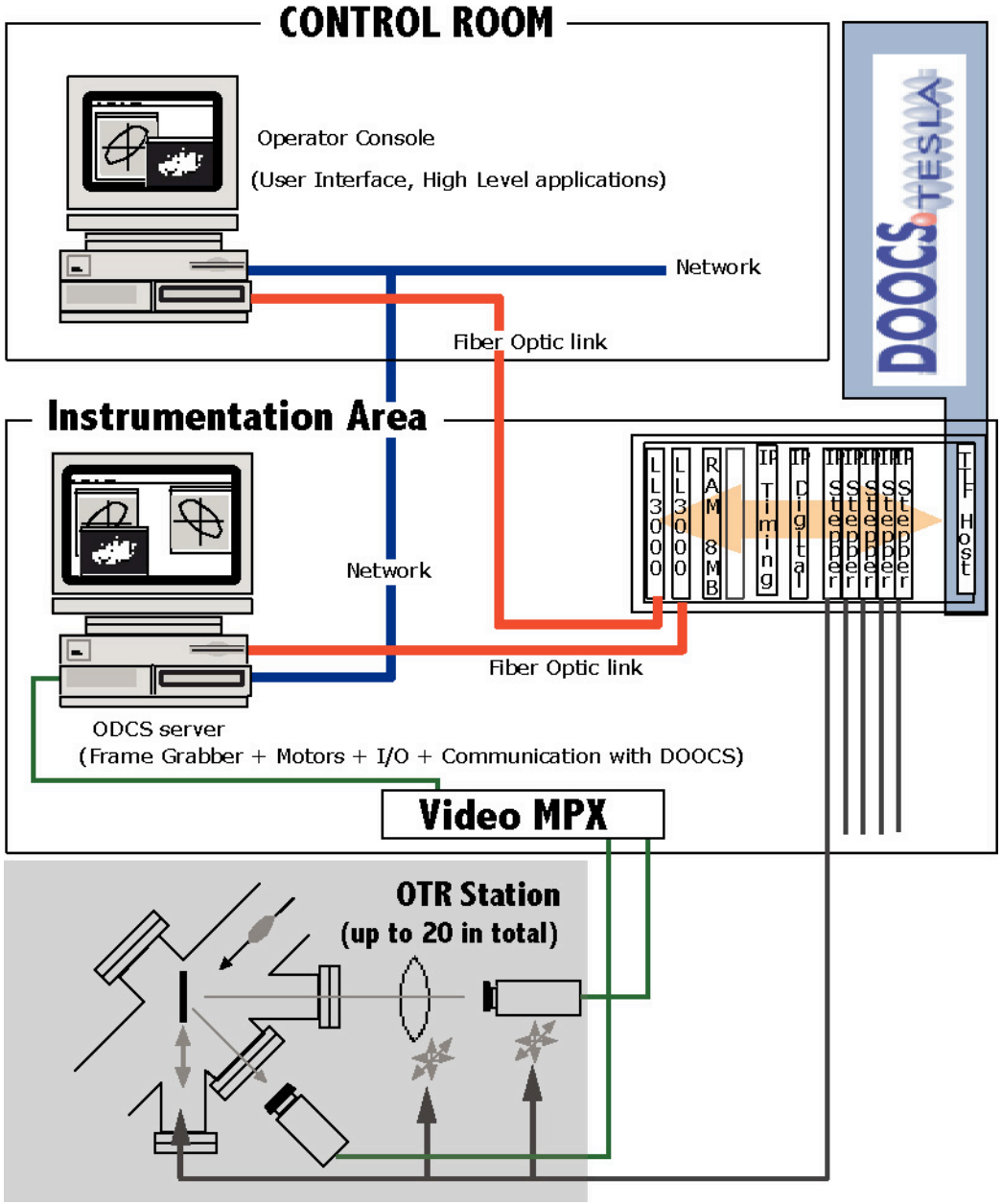

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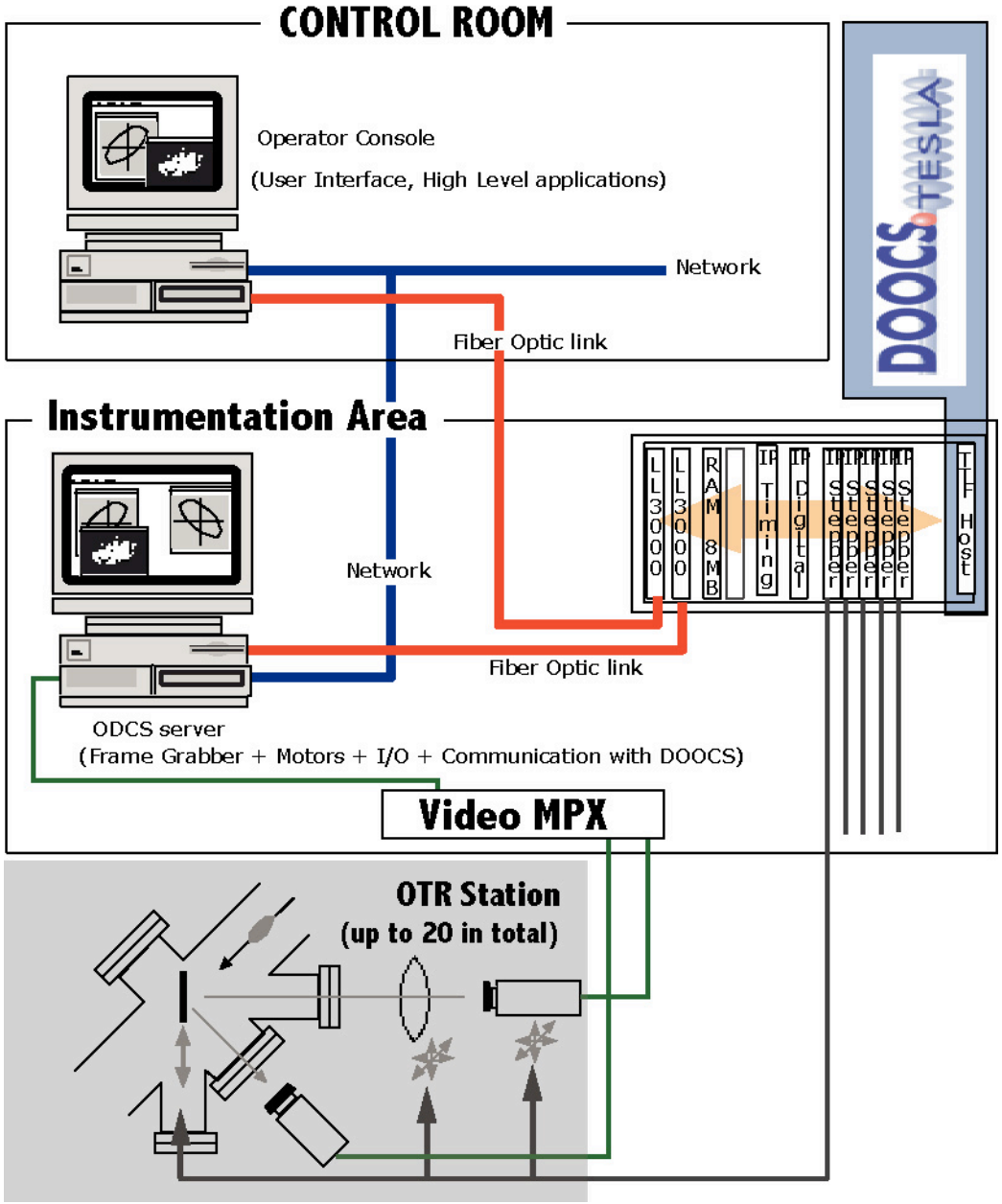

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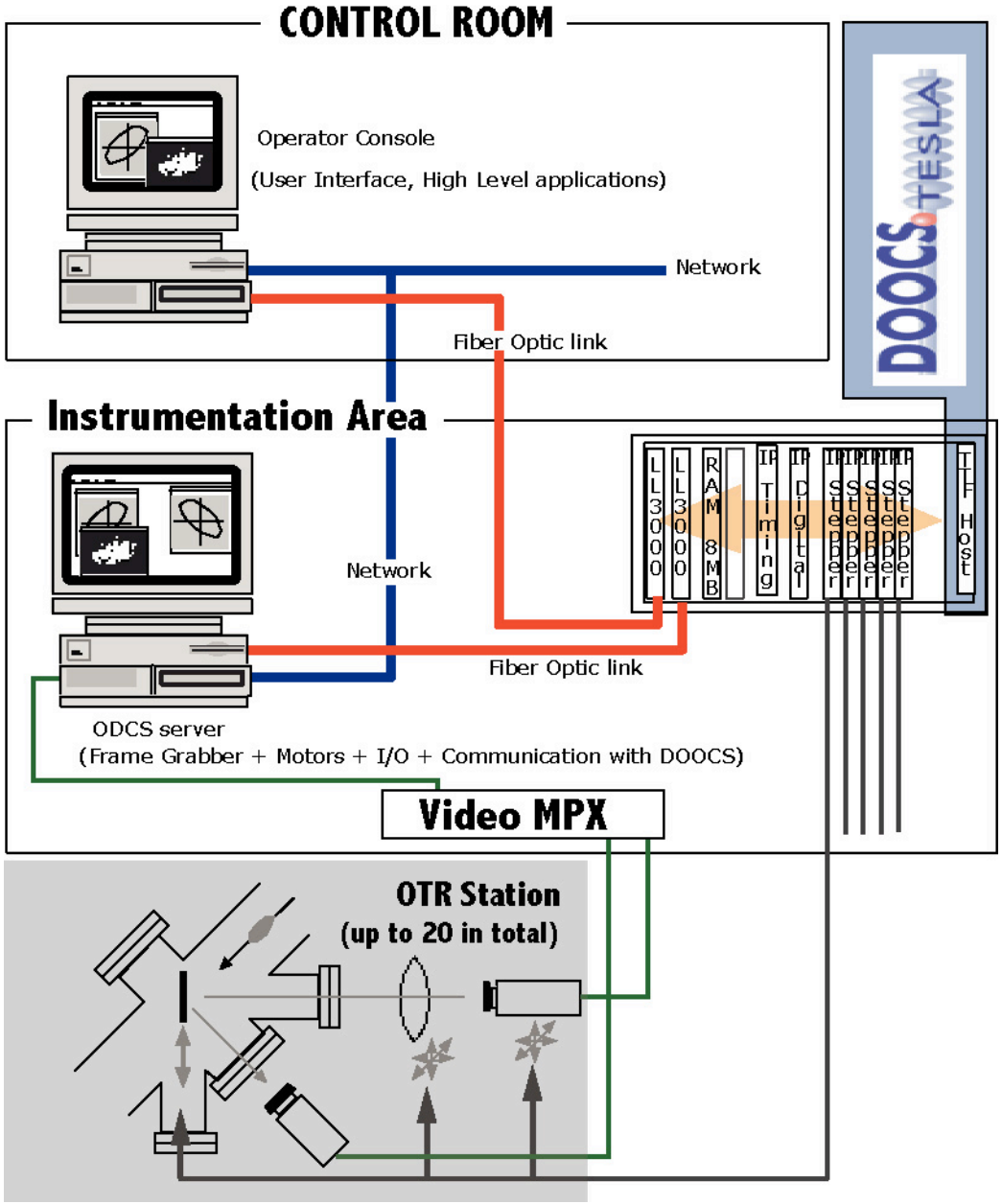

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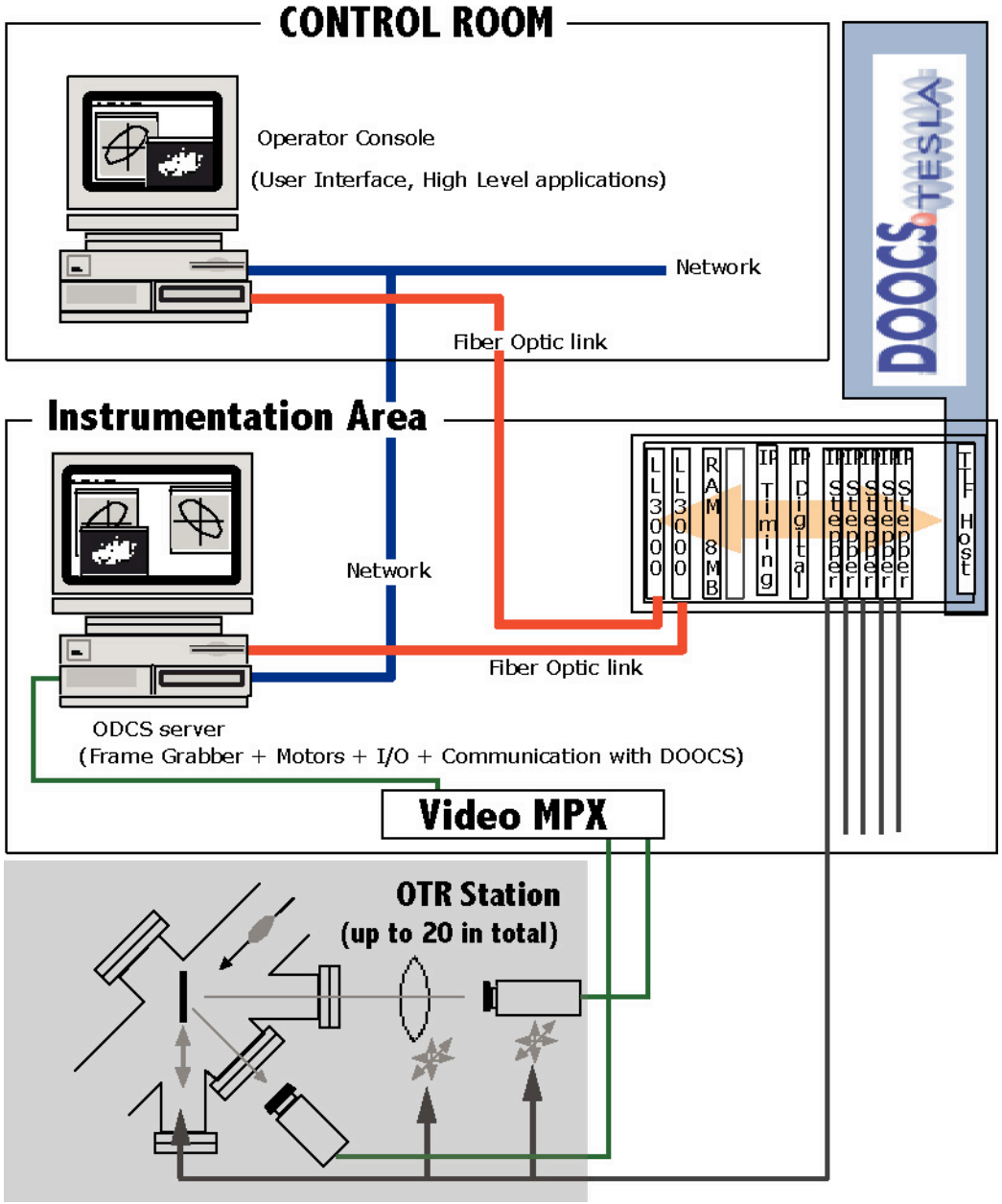

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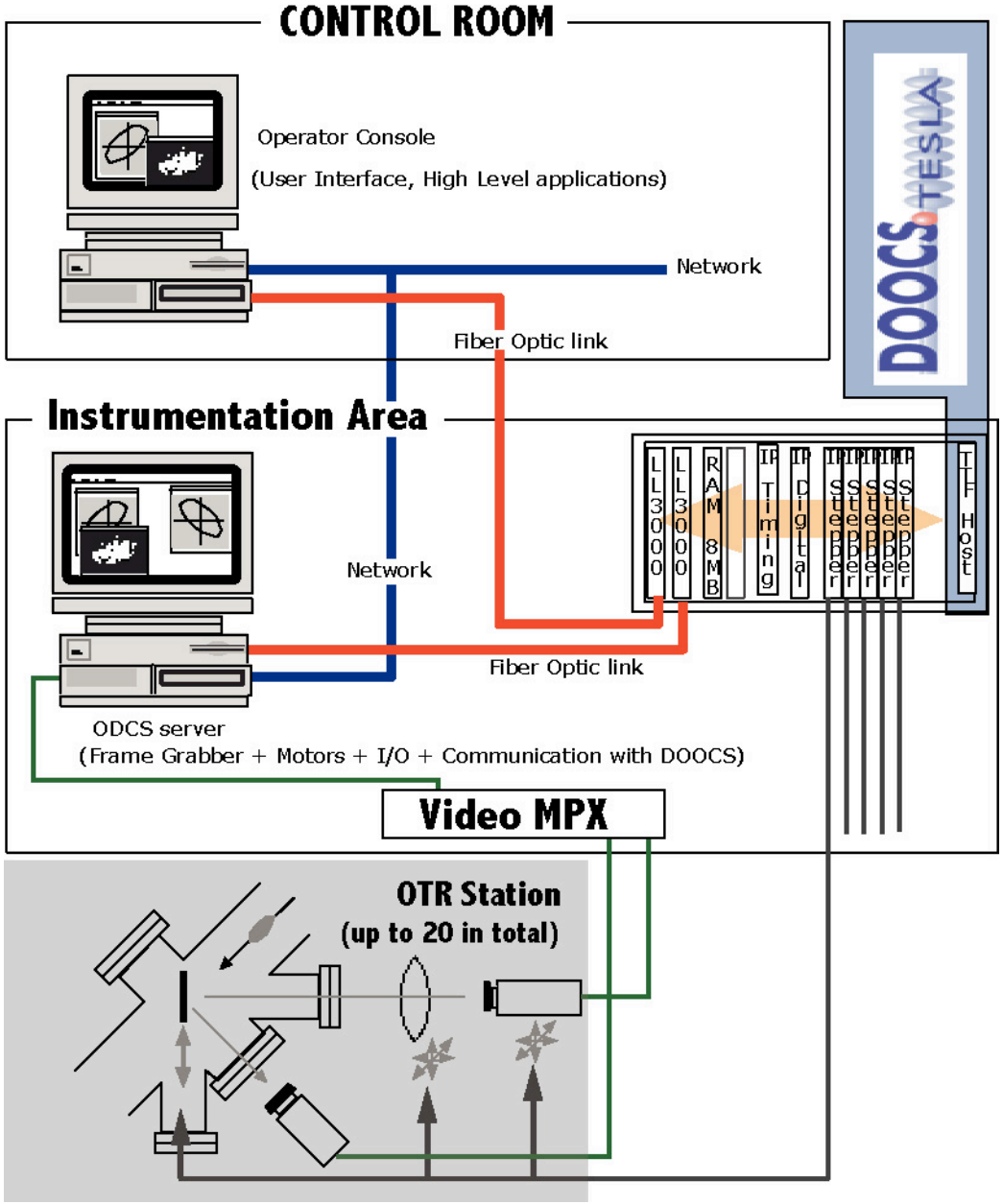

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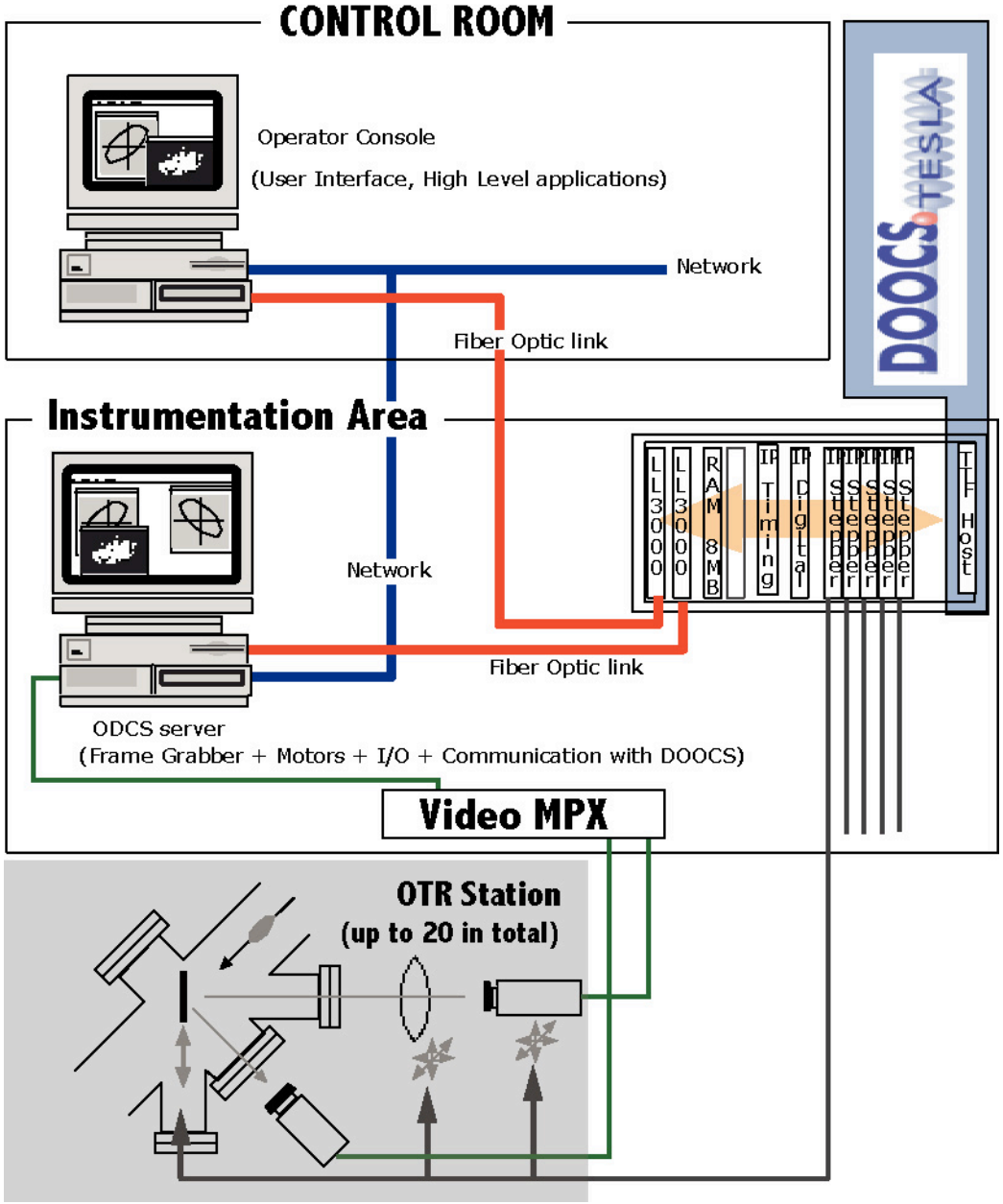

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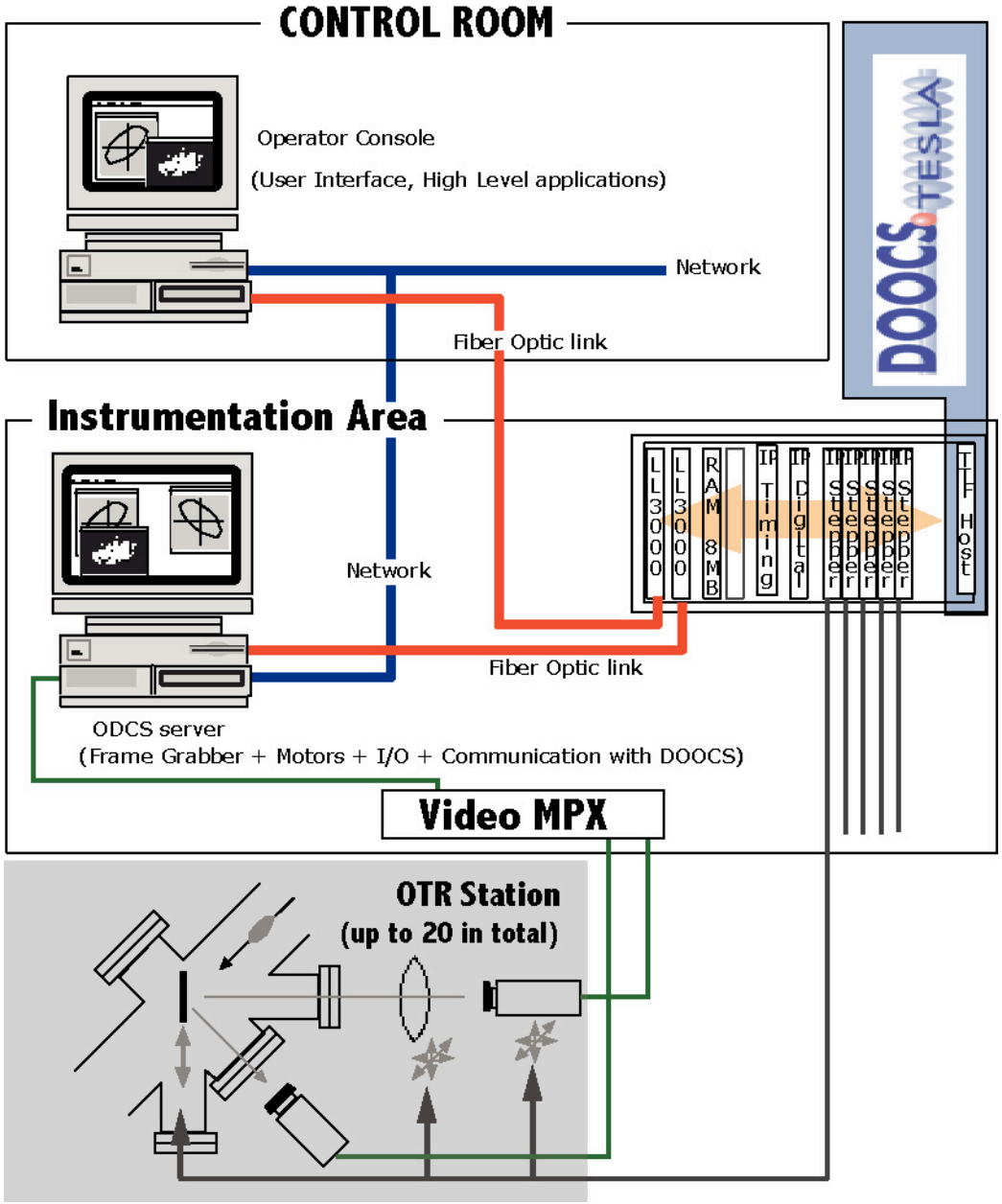

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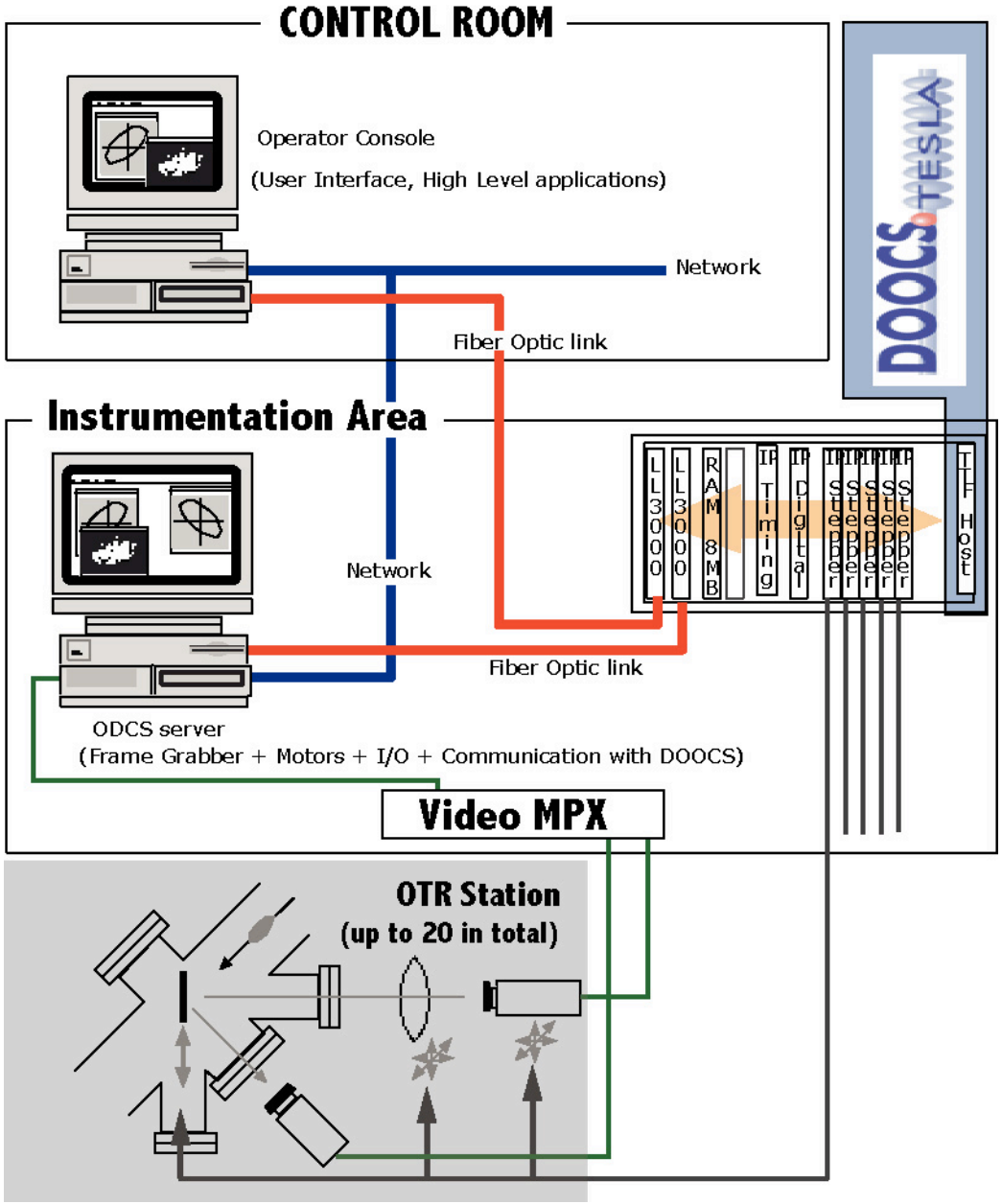

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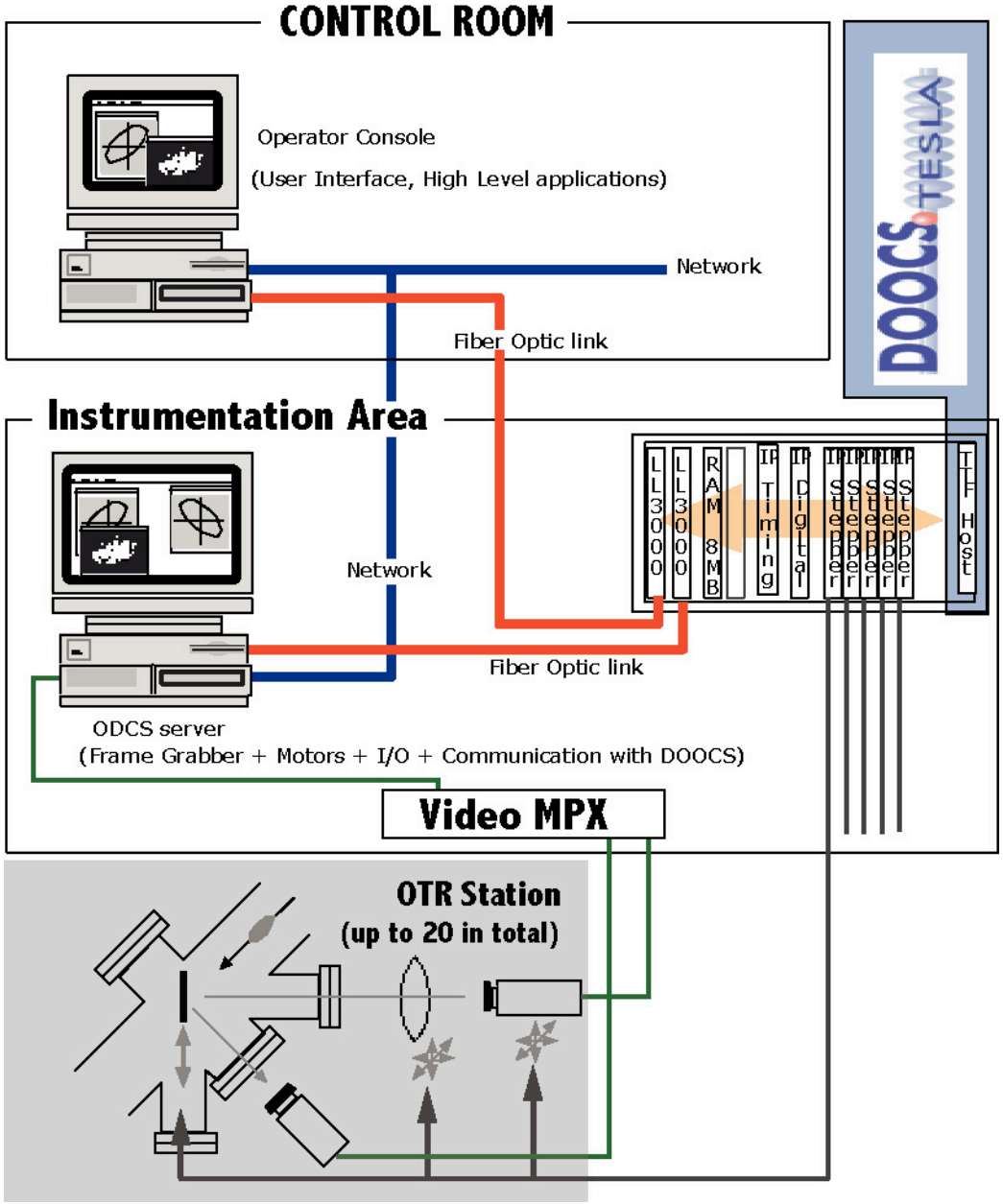

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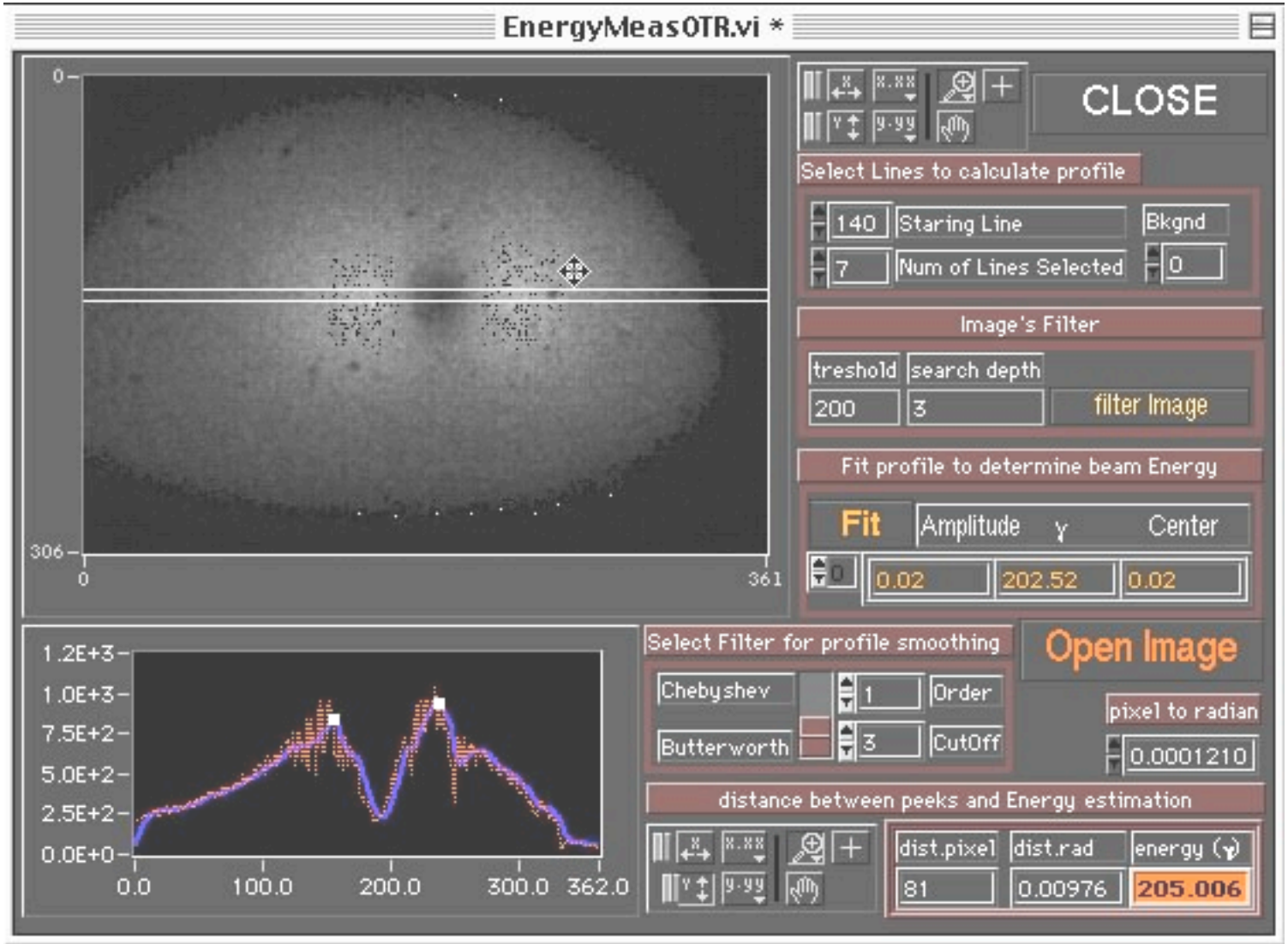
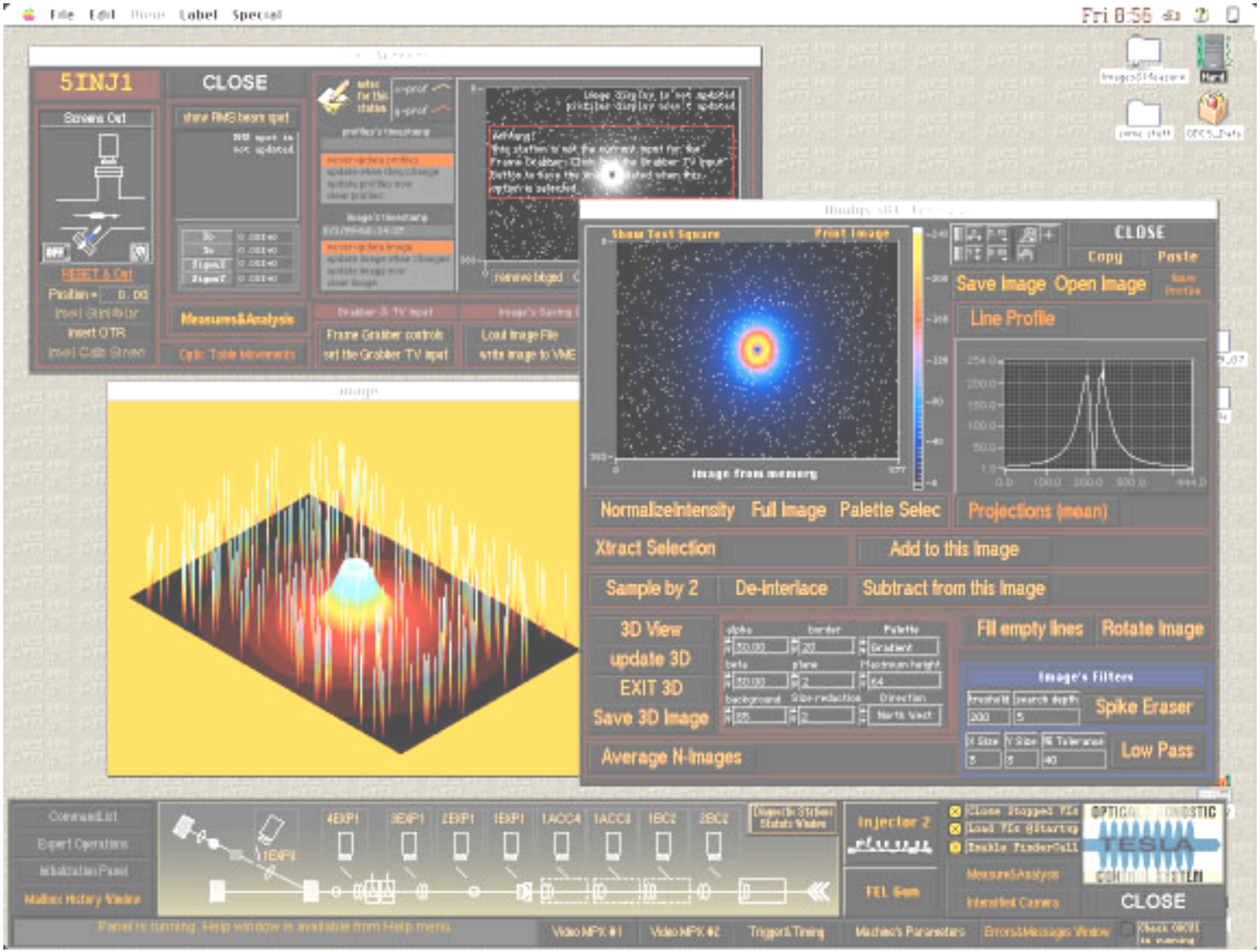
- Low-level C-library for LabVIEW
  (labVIEW doesn't provide pointer variables)

Example of Measurement applications



ODCS Client Desktop



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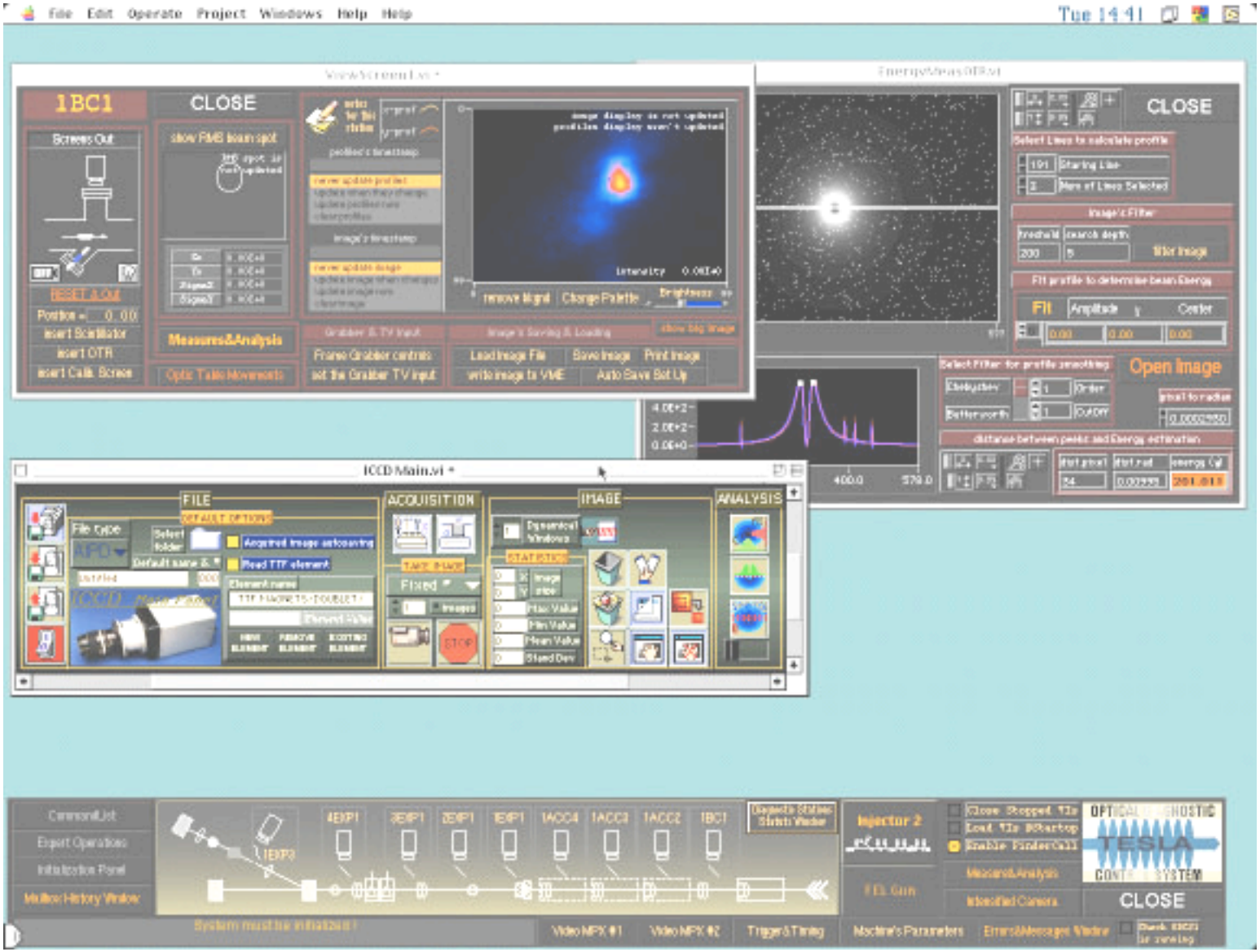
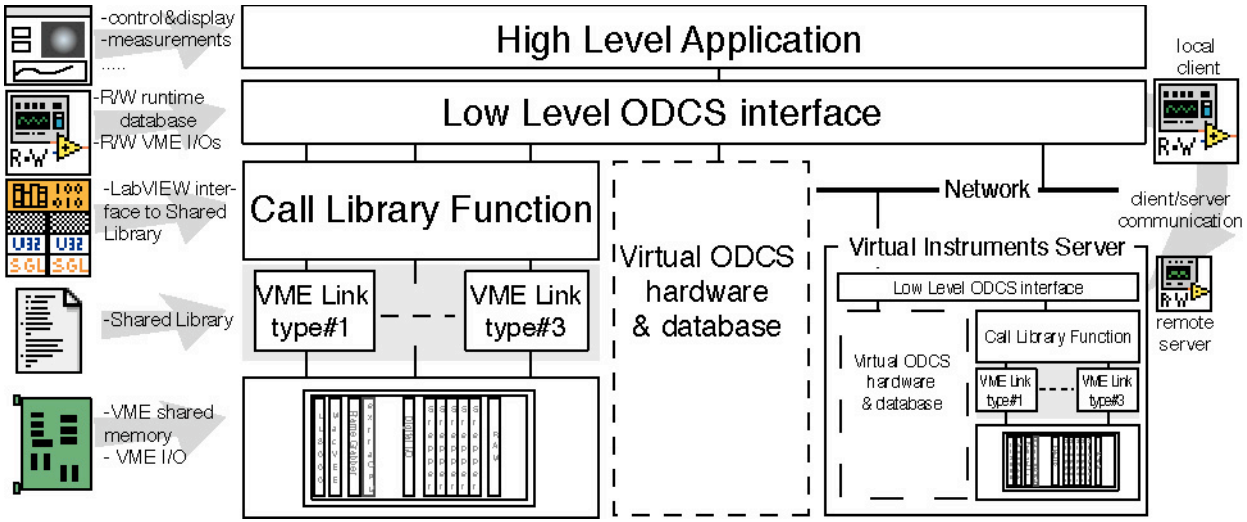
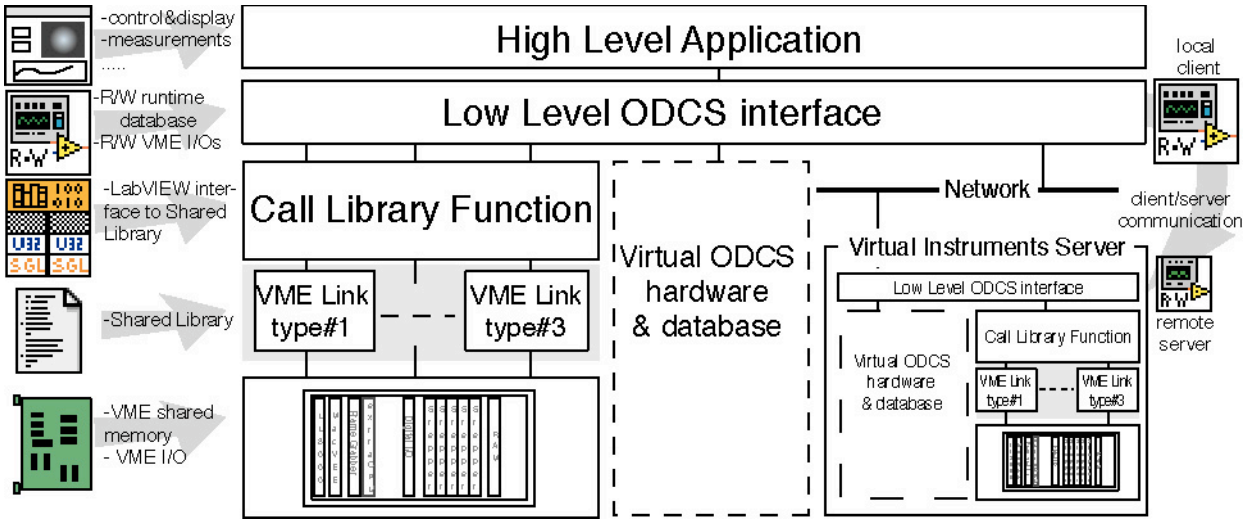




ODCS v.2

1999 (see PCaPAC200)



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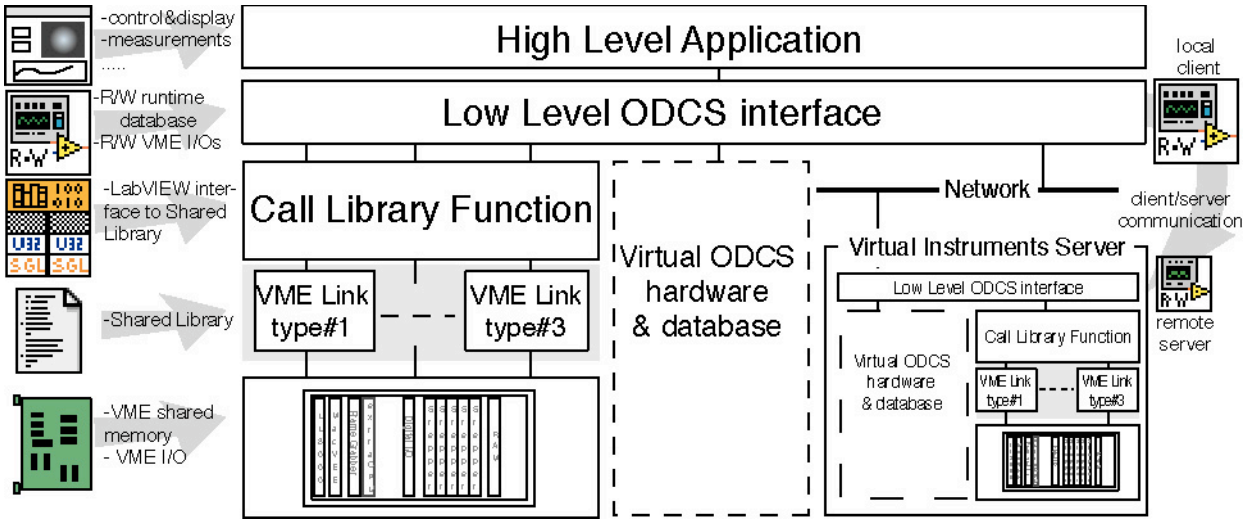

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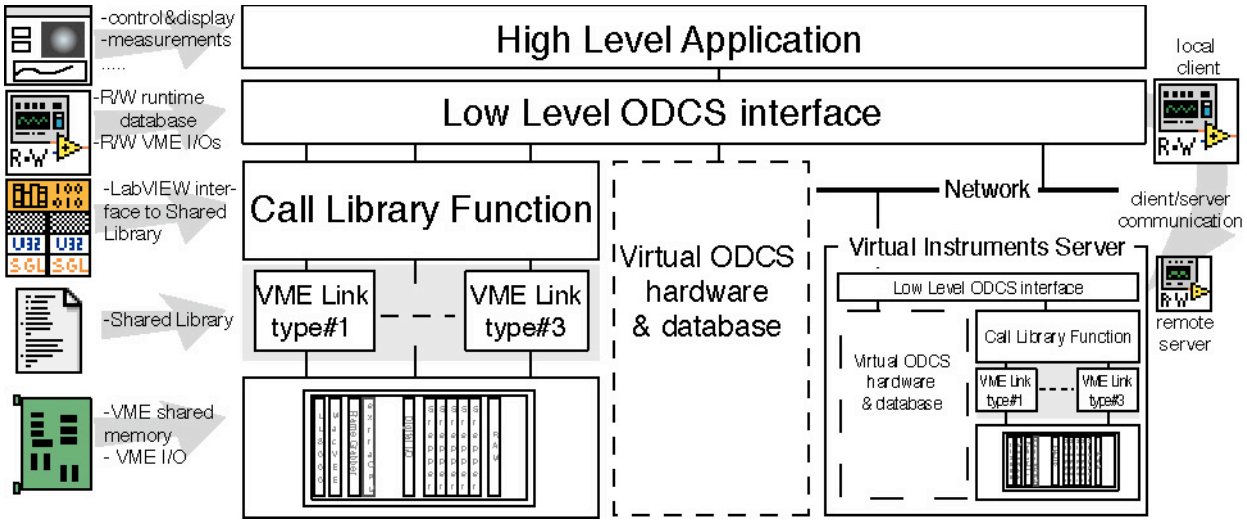

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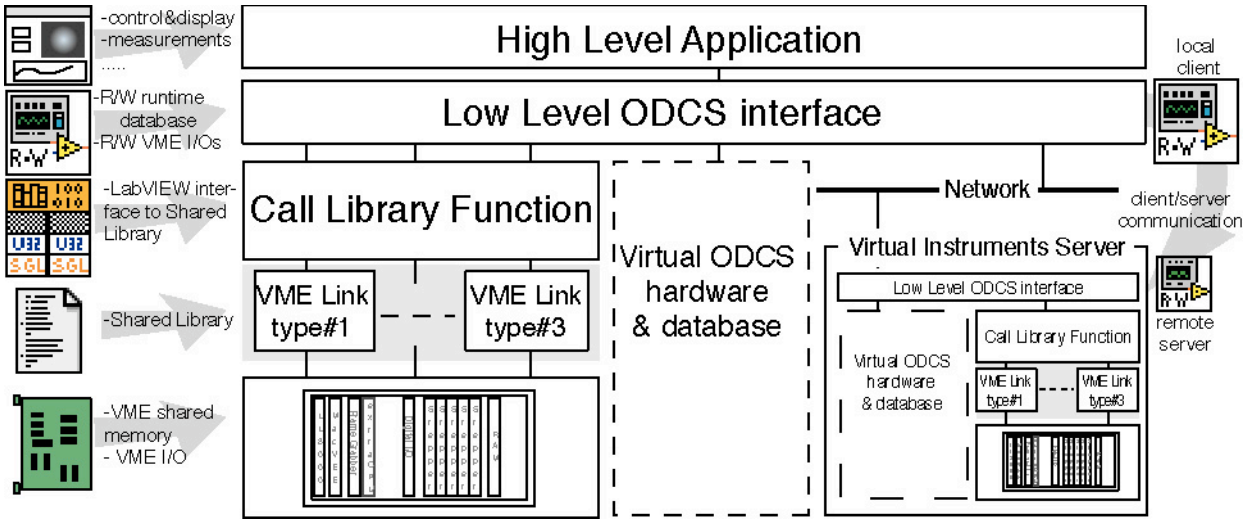

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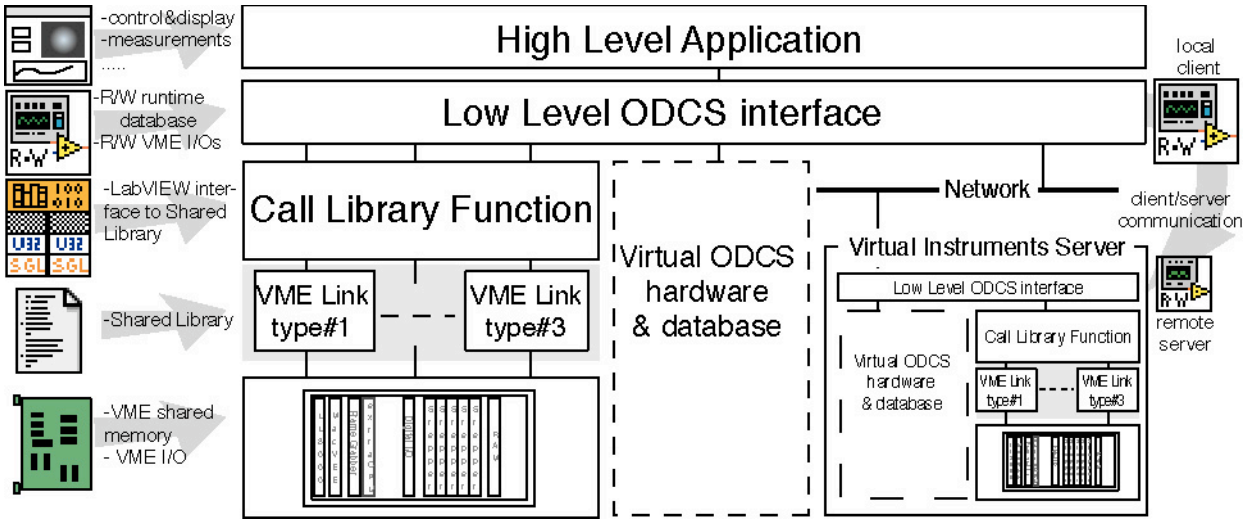

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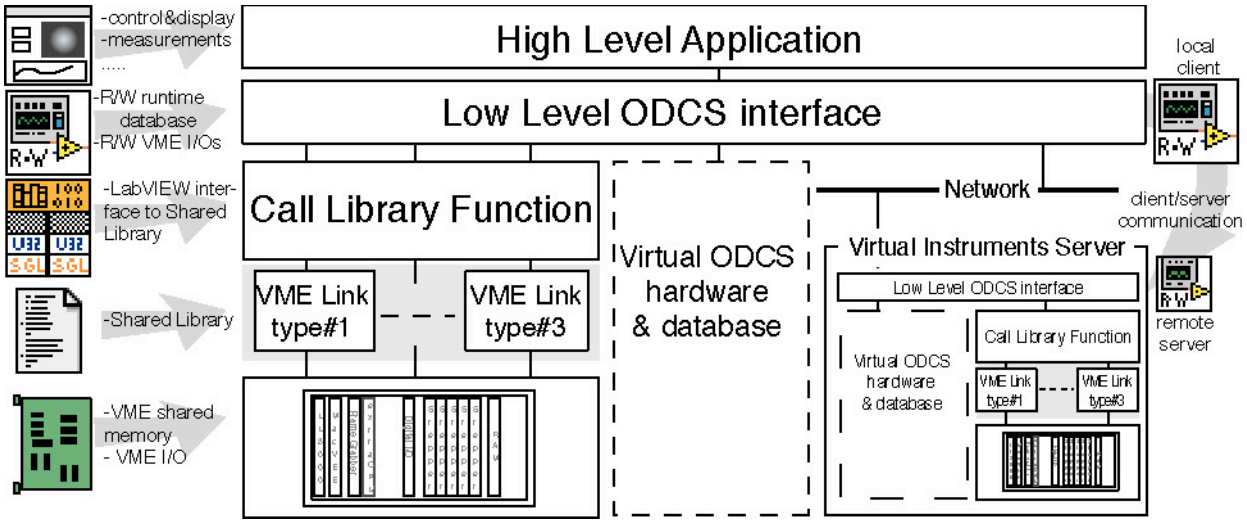

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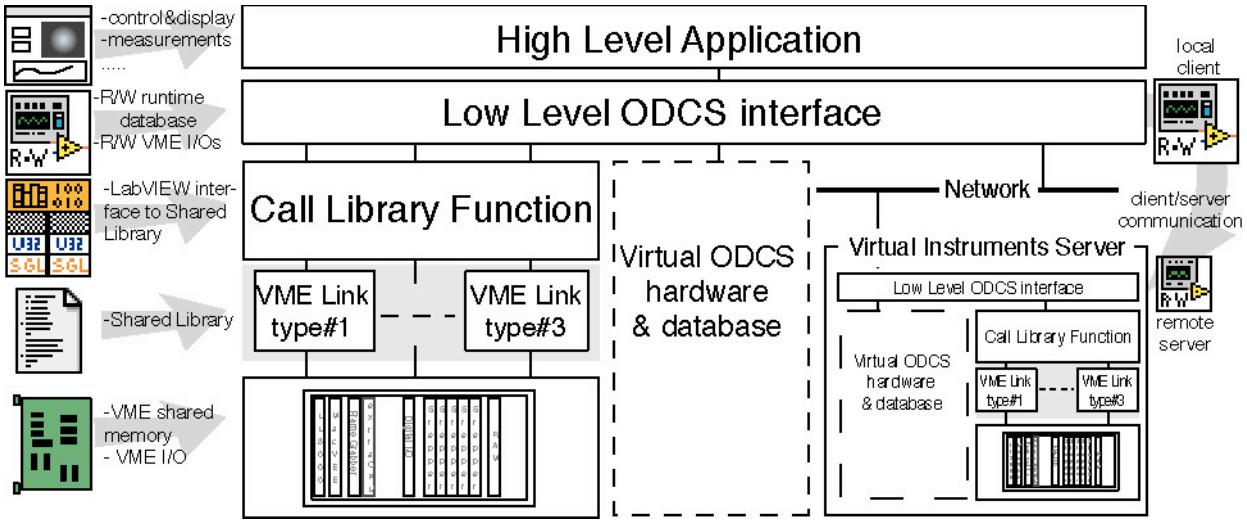

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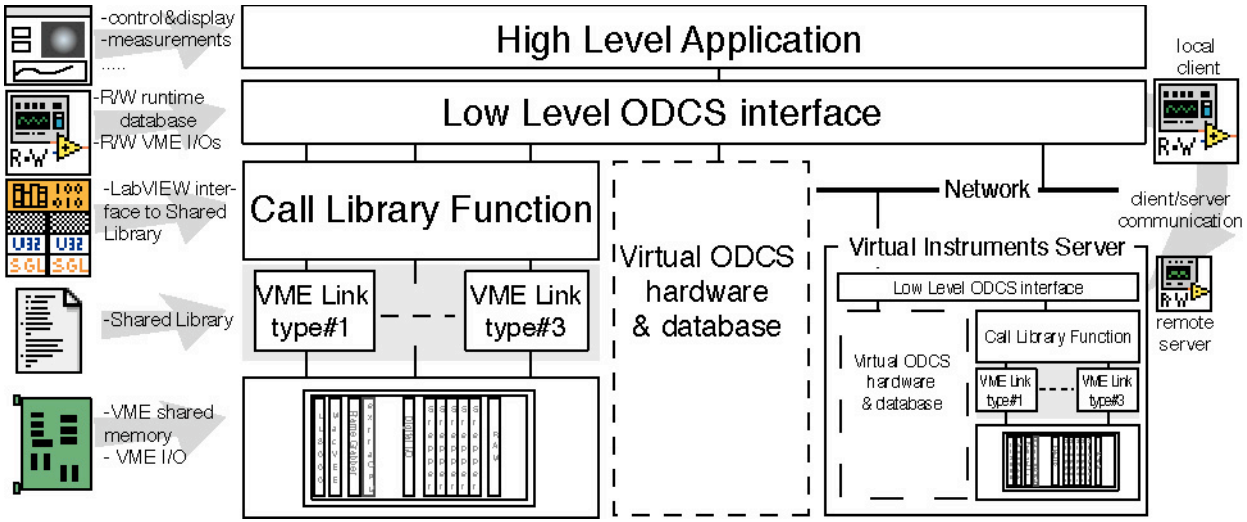

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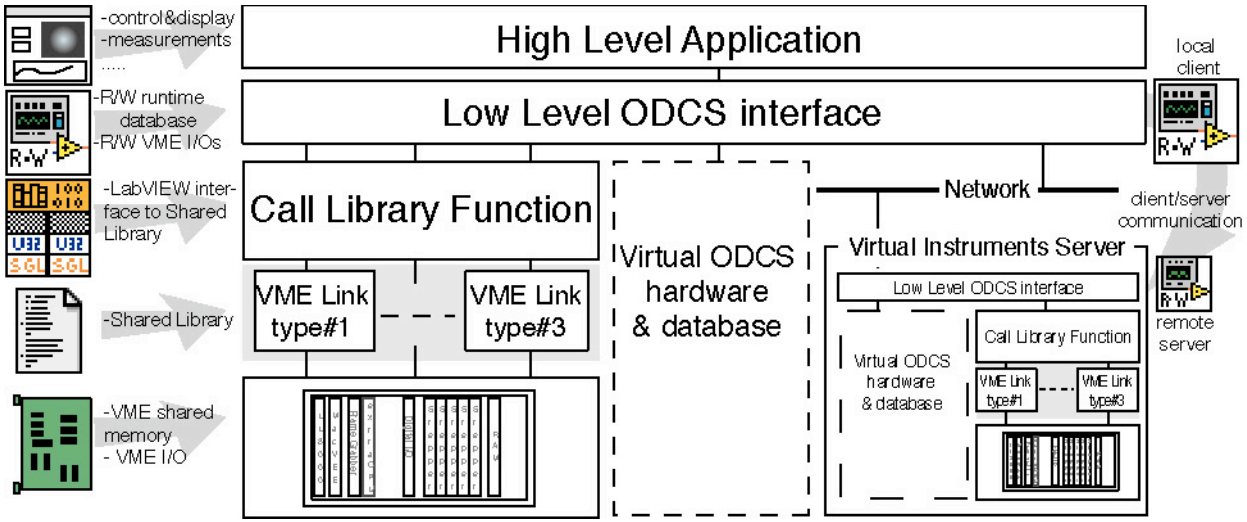

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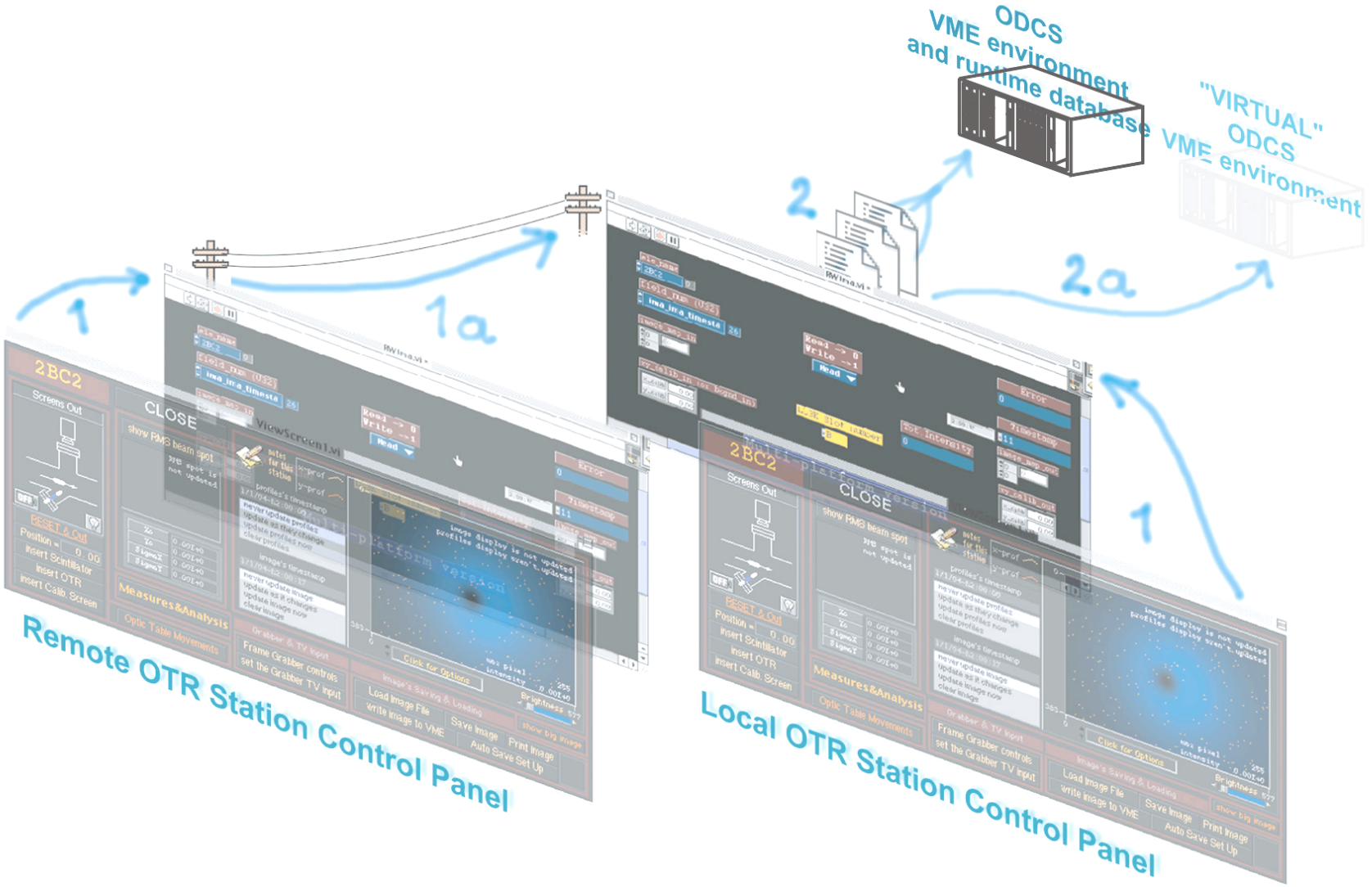
ODCS
VME environment
and runtime database
"VIRTUAL"
ODCS
VME environment
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1a
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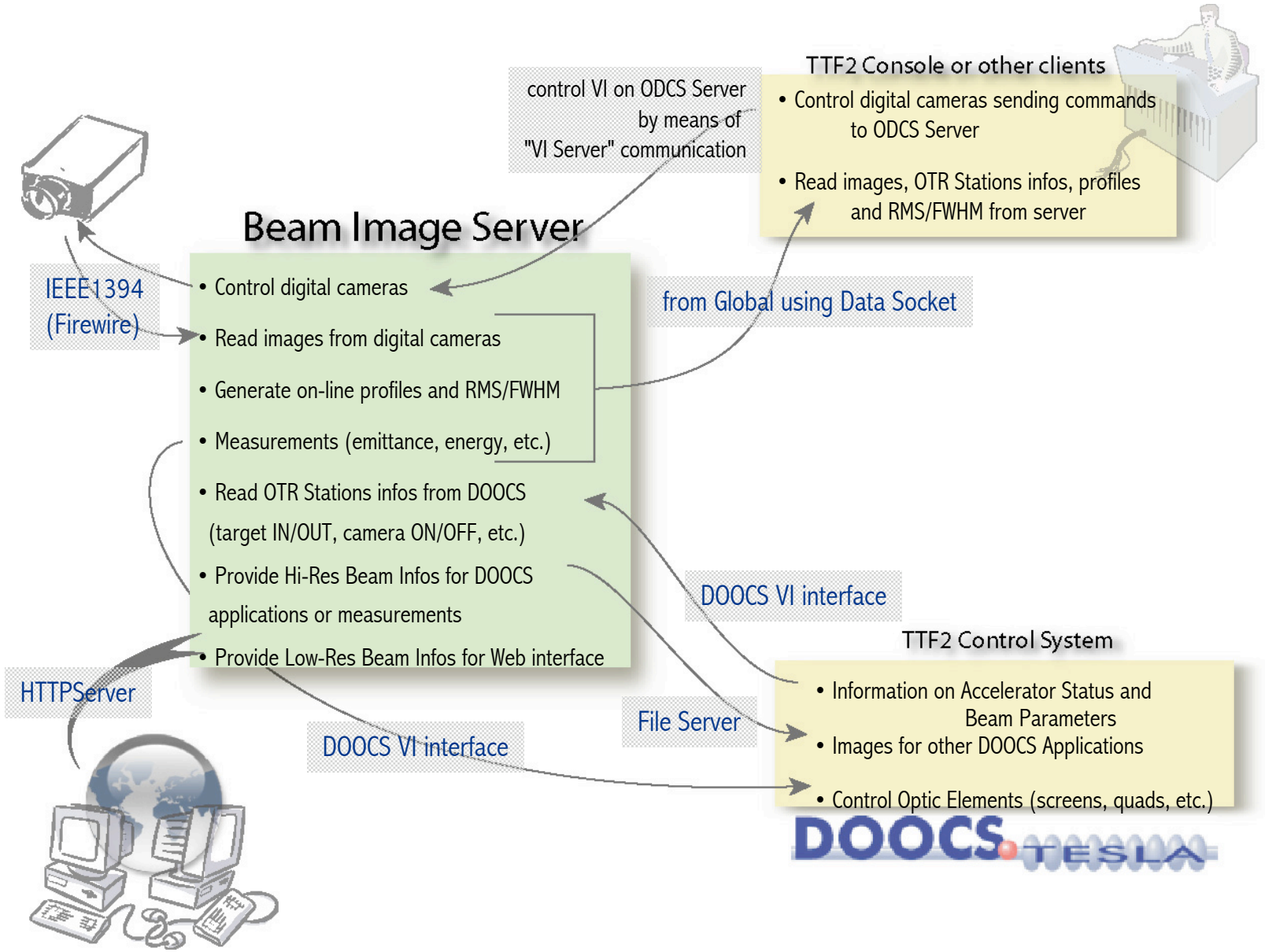

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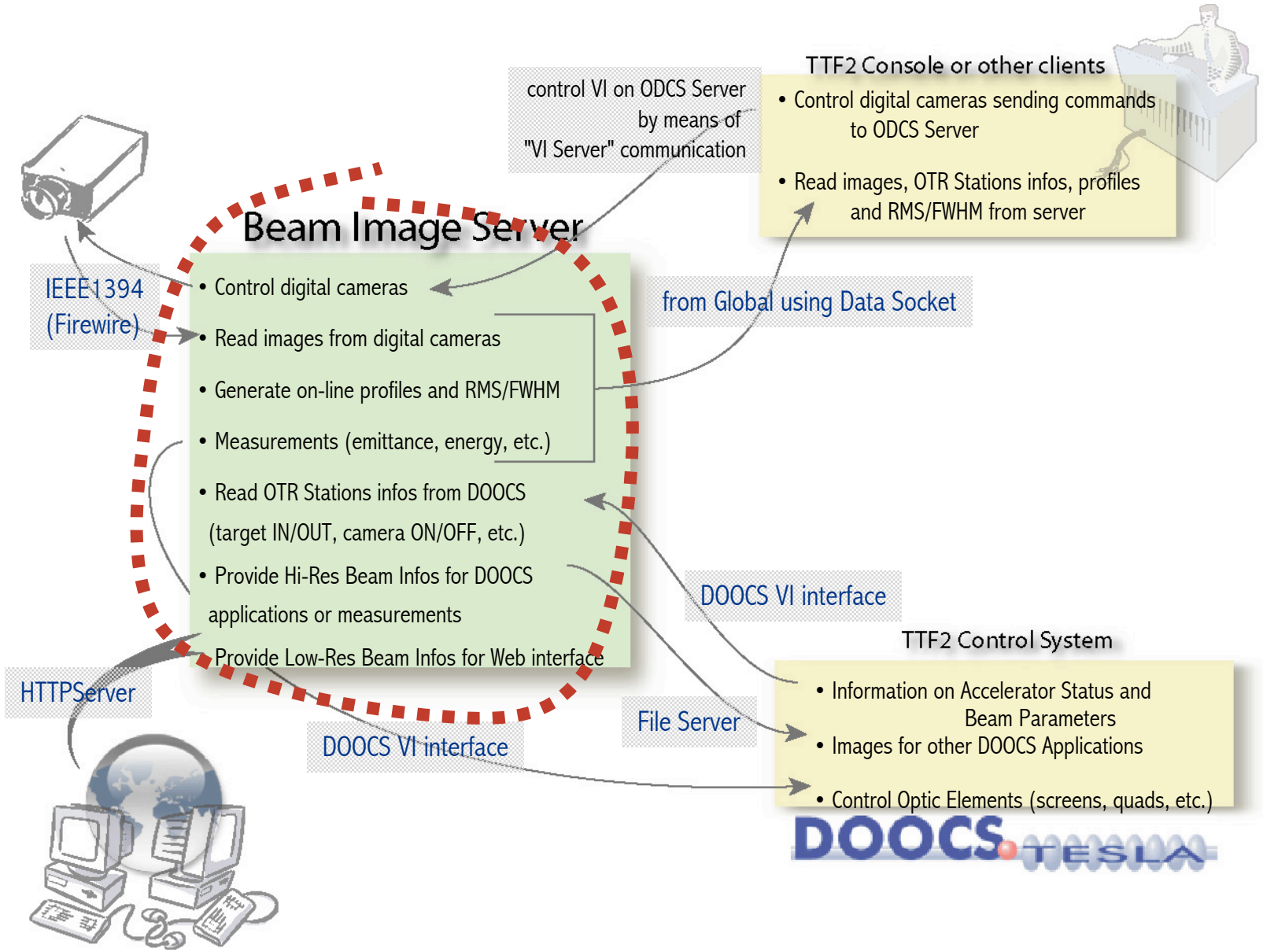

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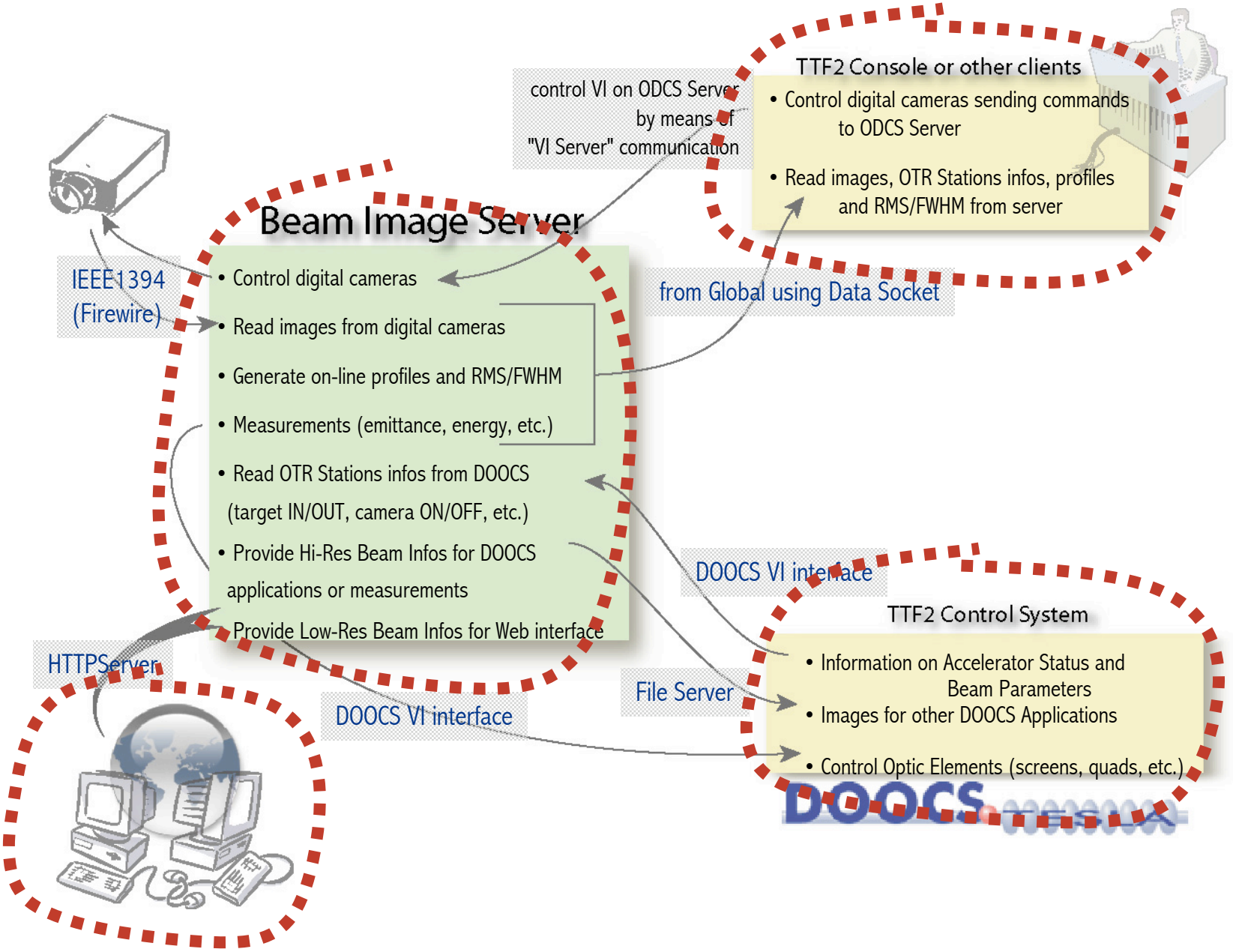

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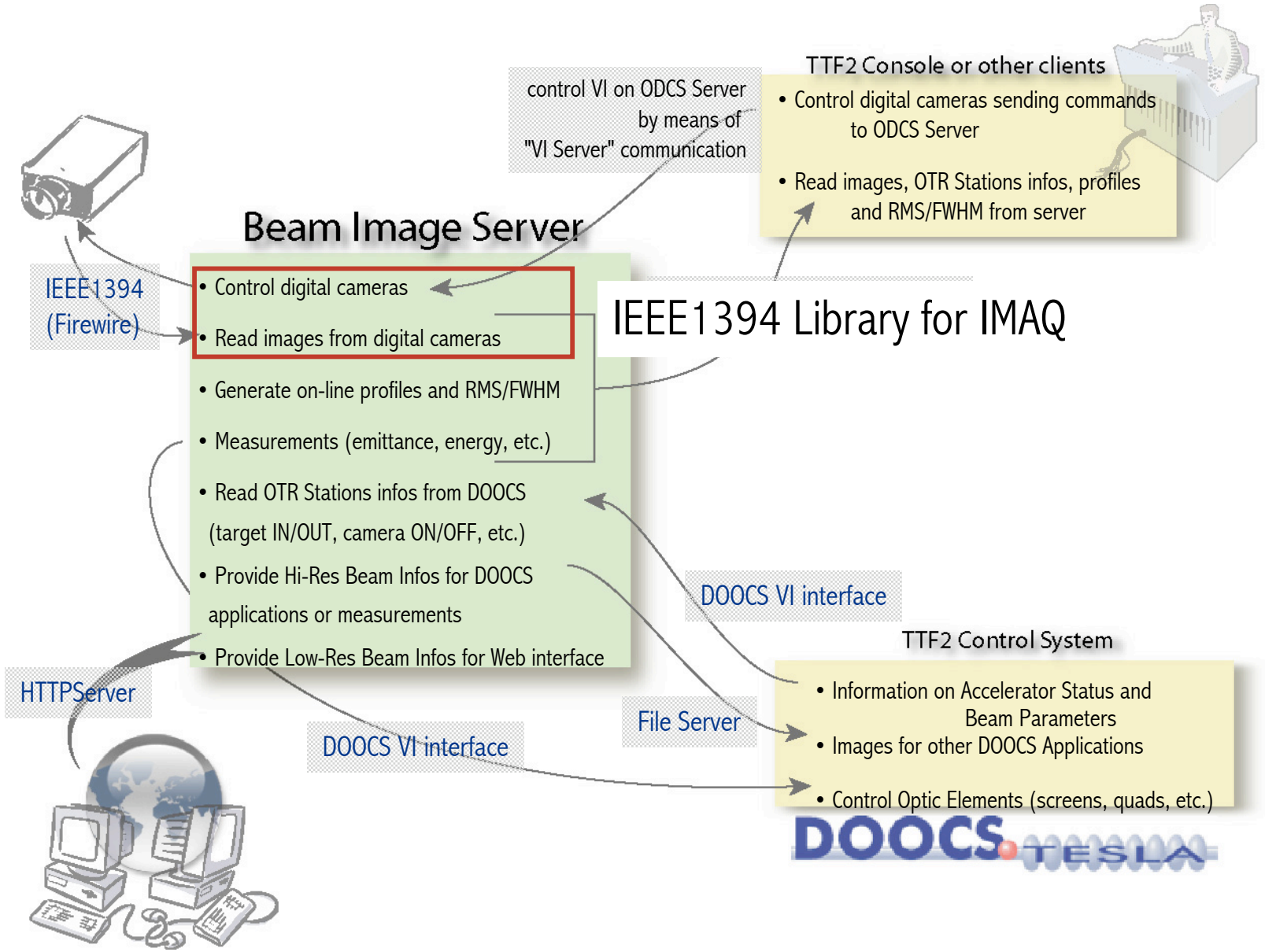

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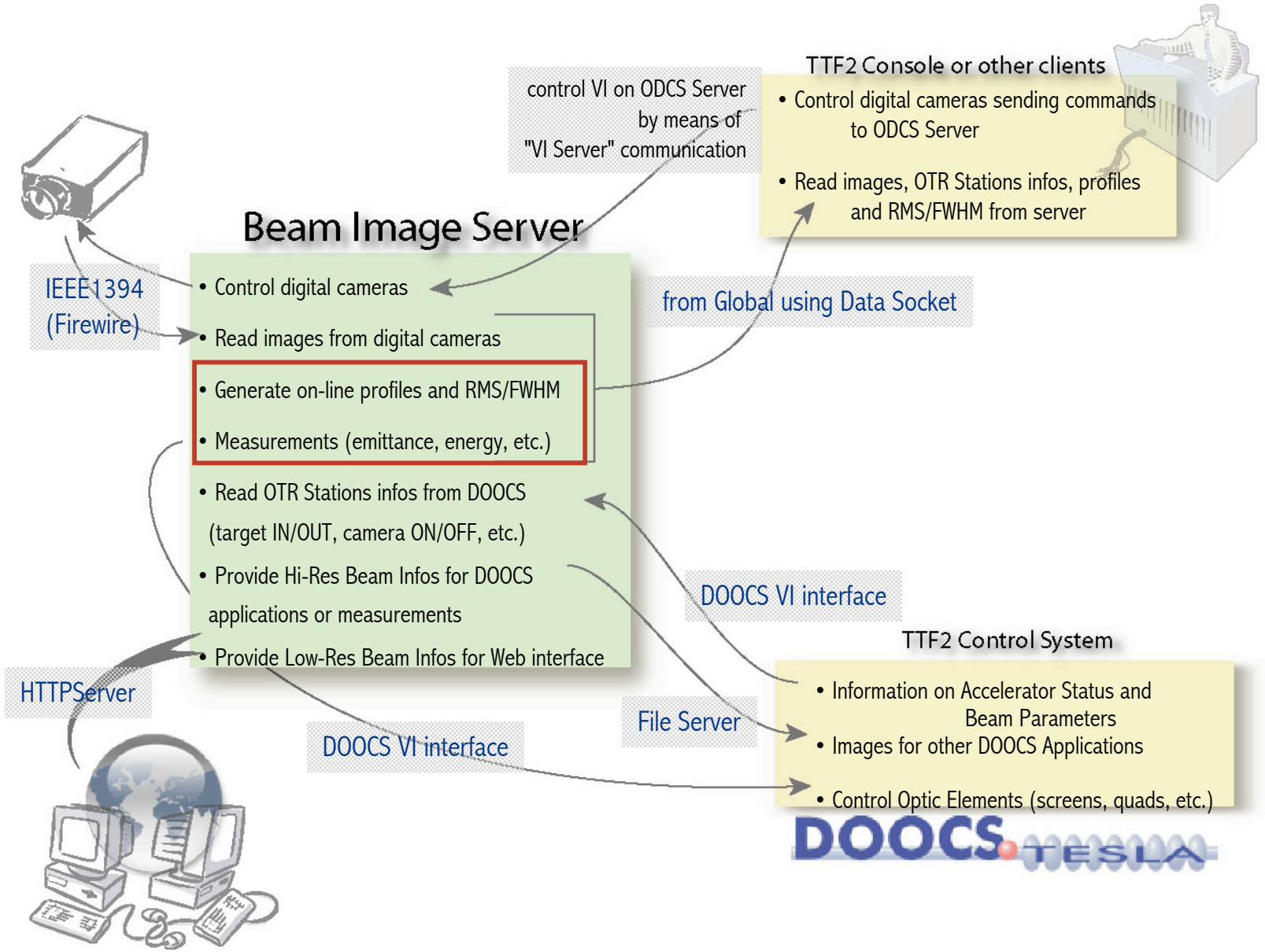

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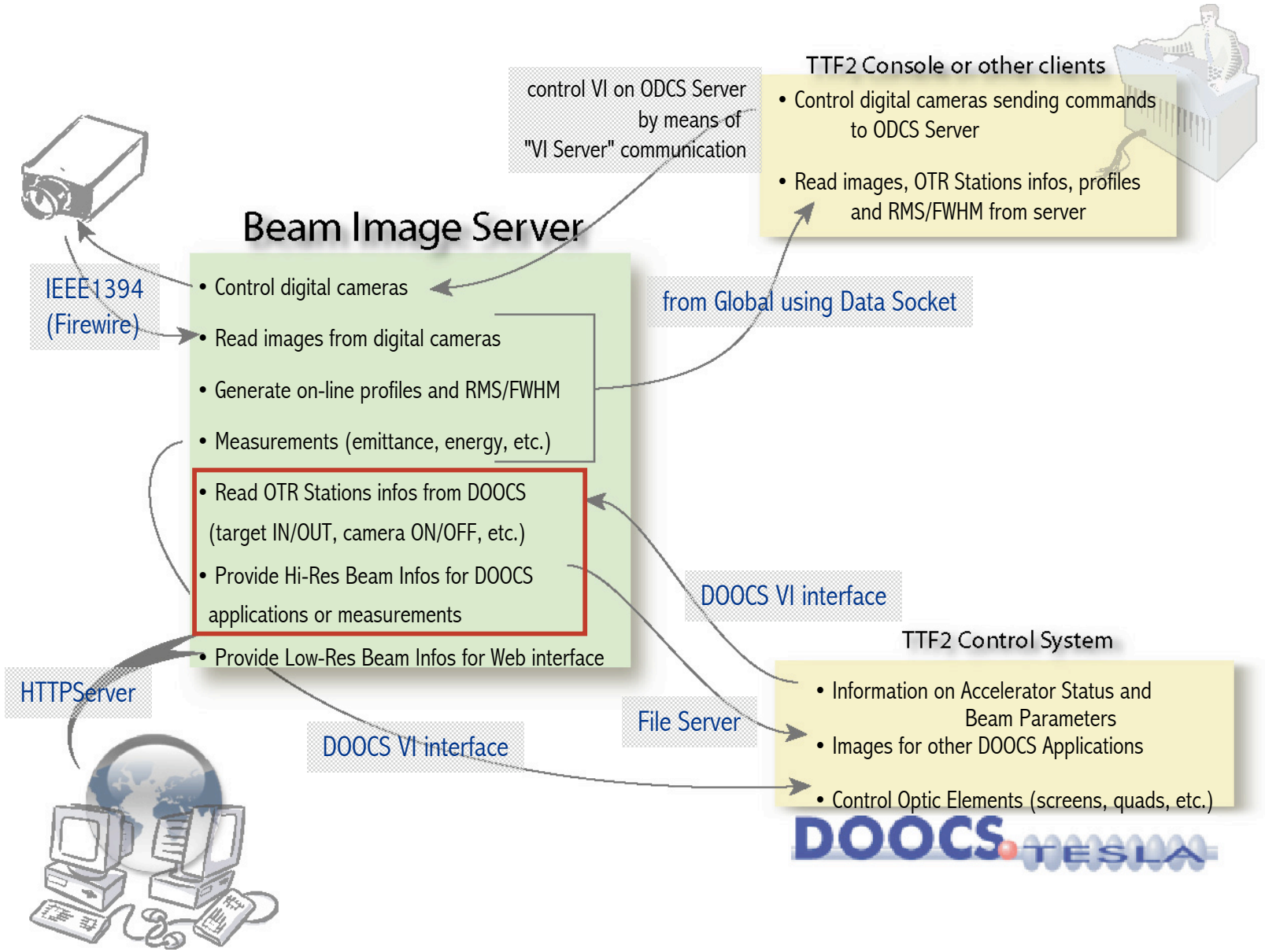

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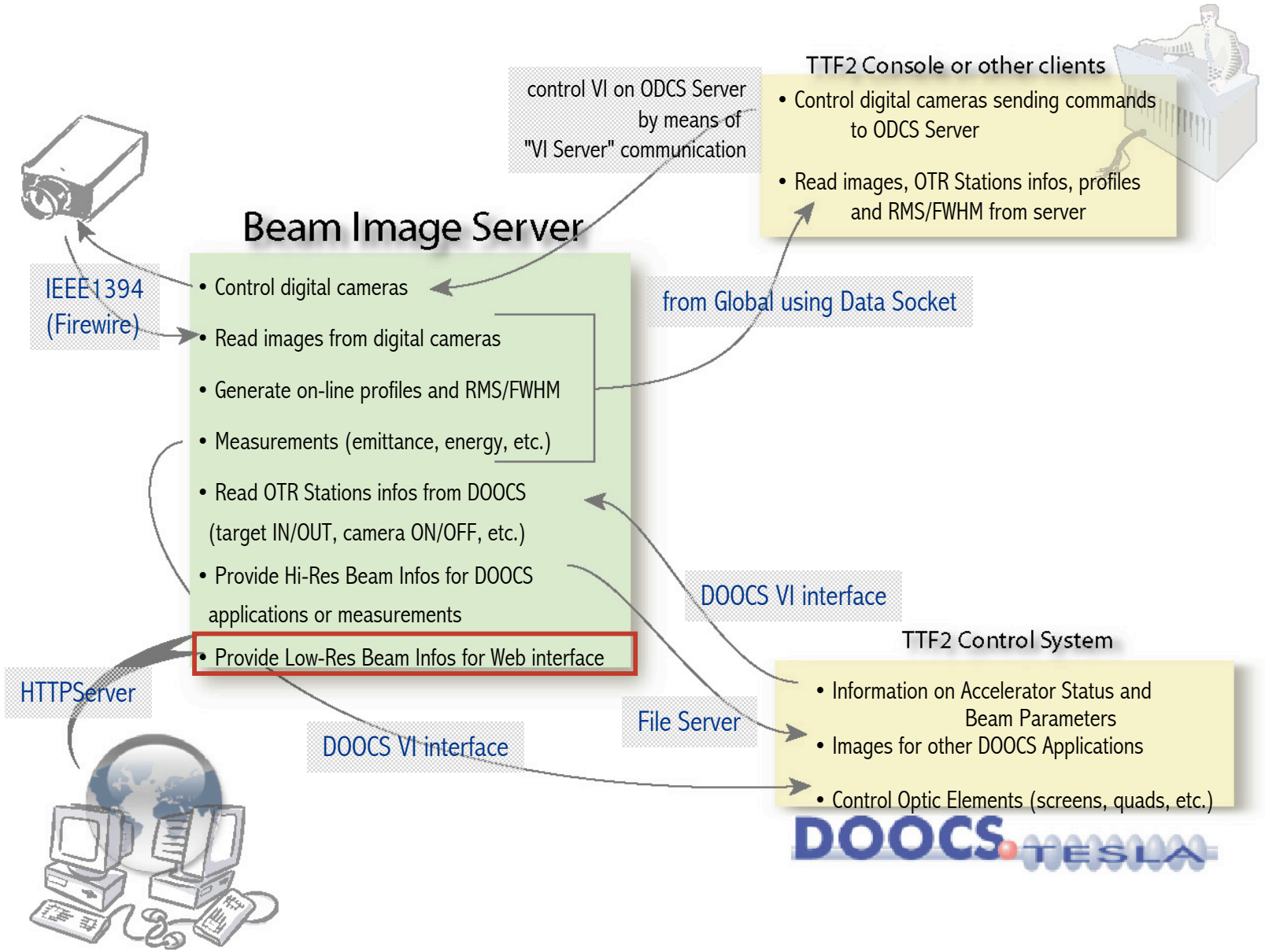

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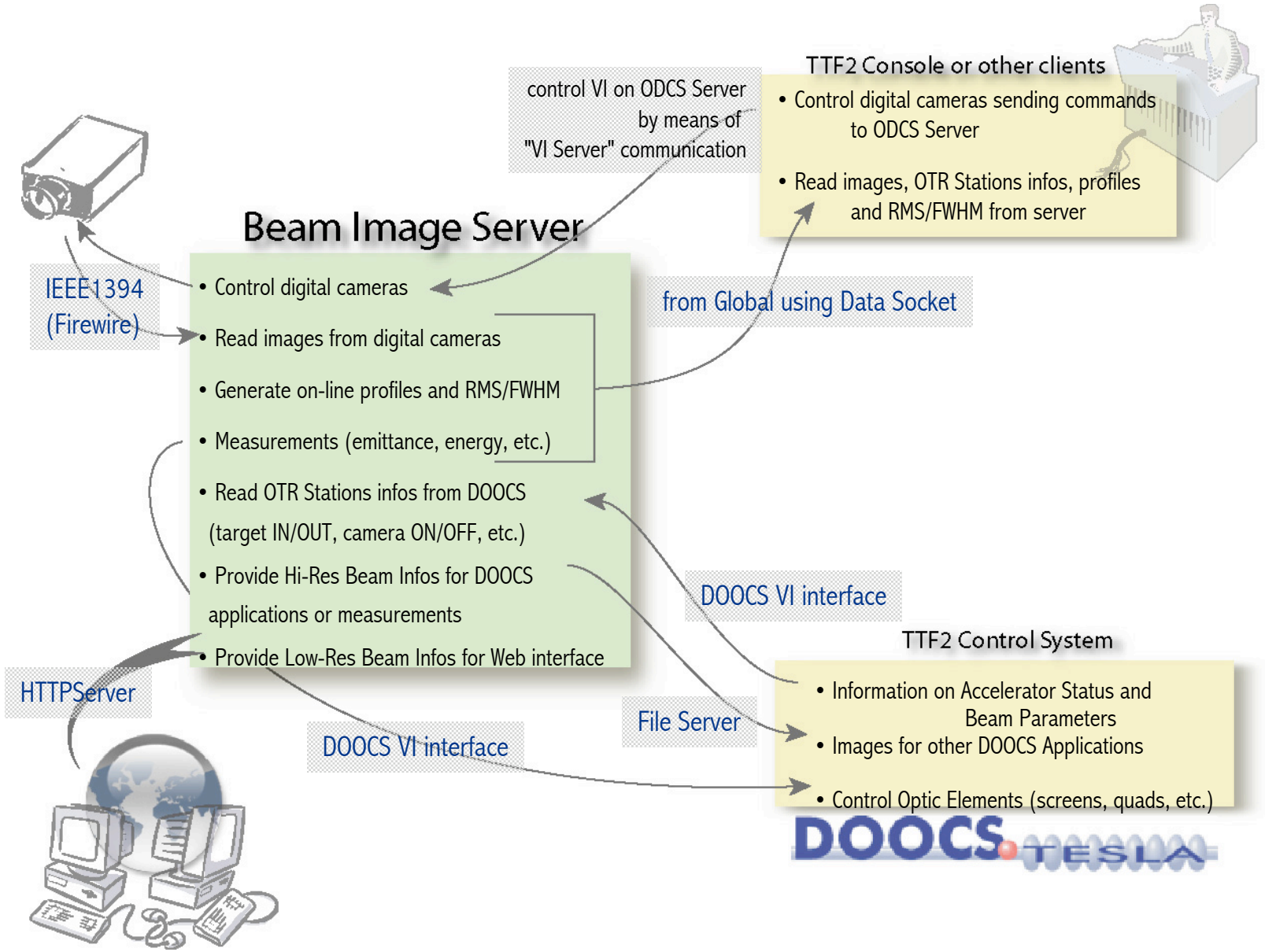
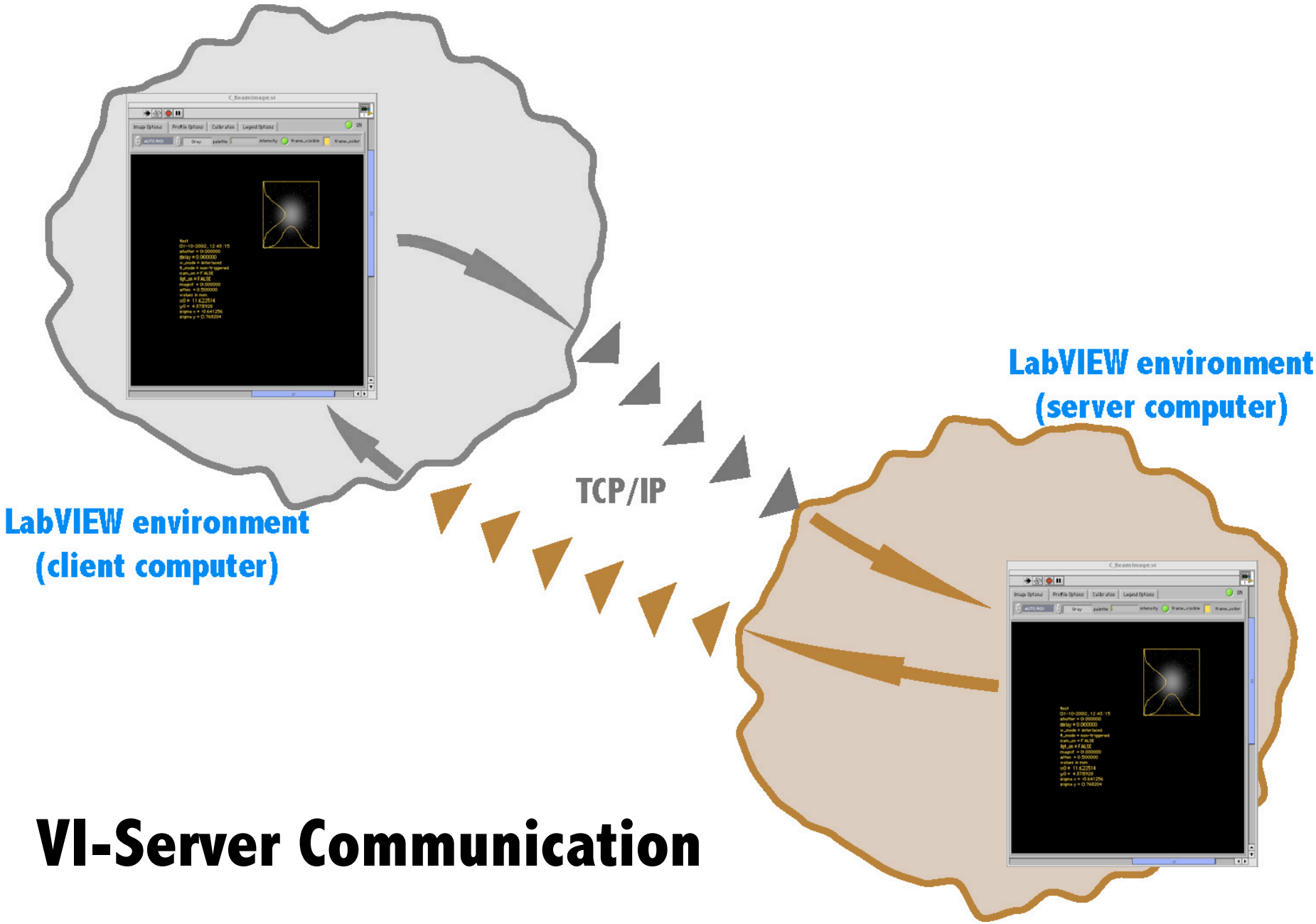
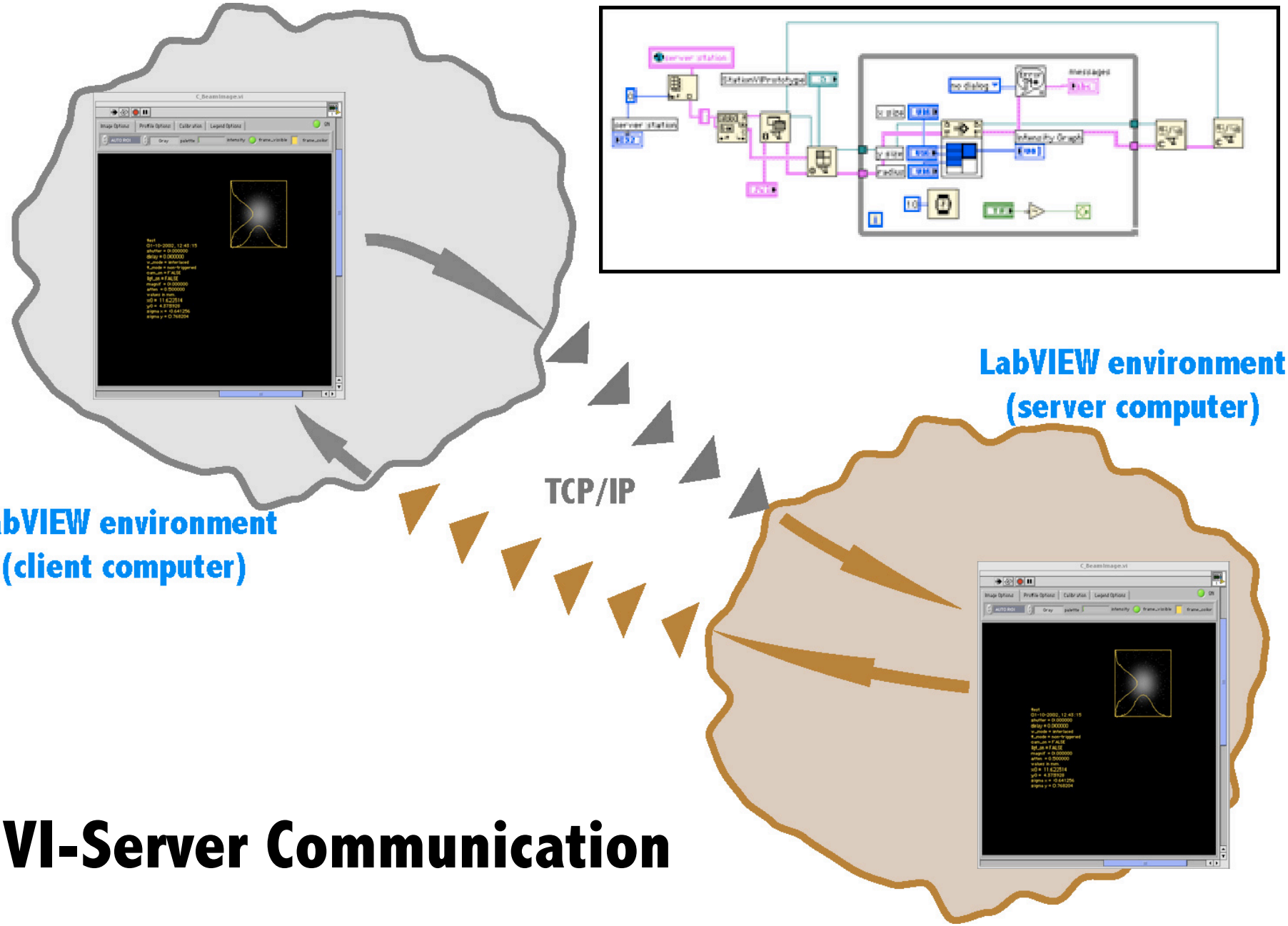
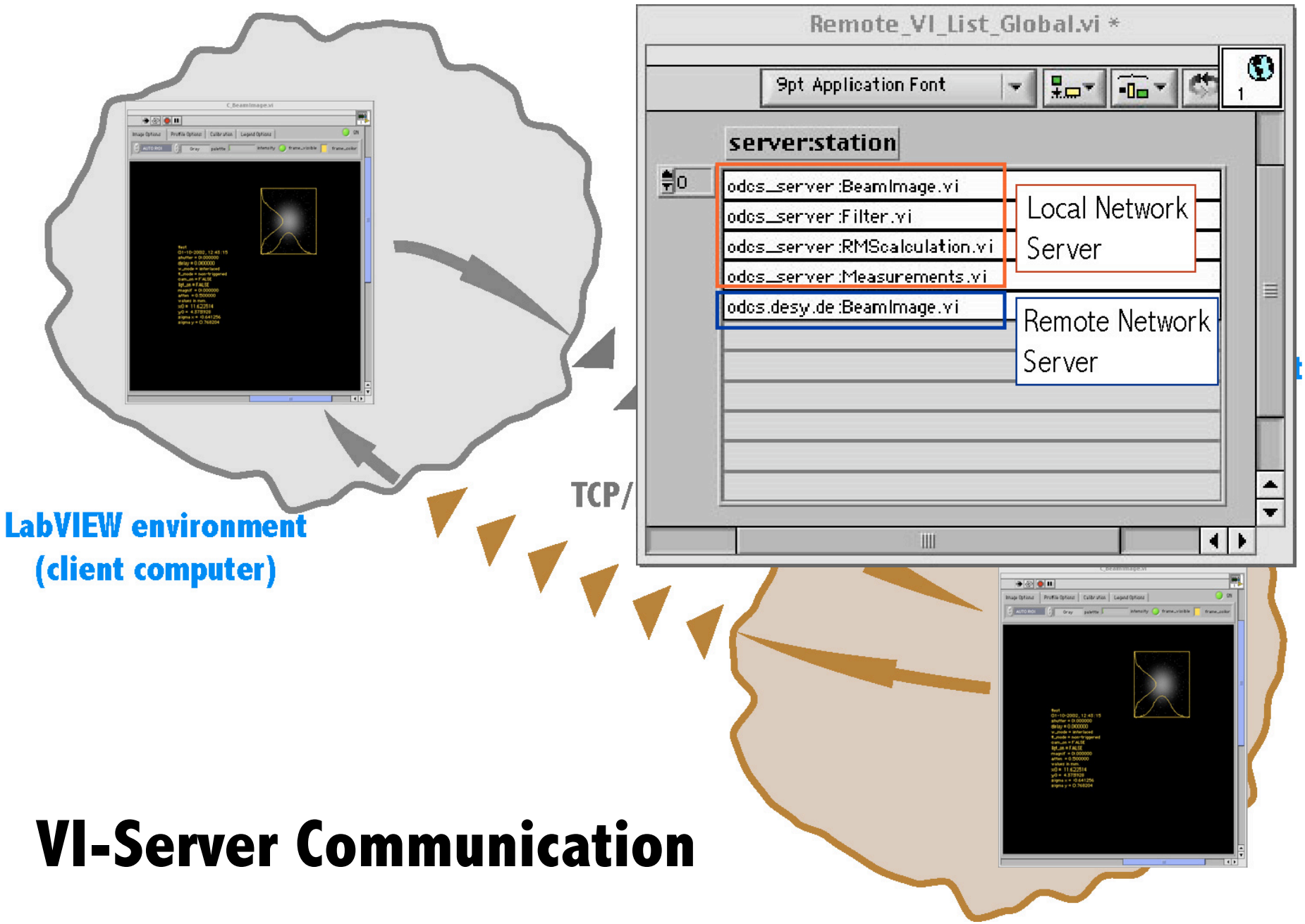




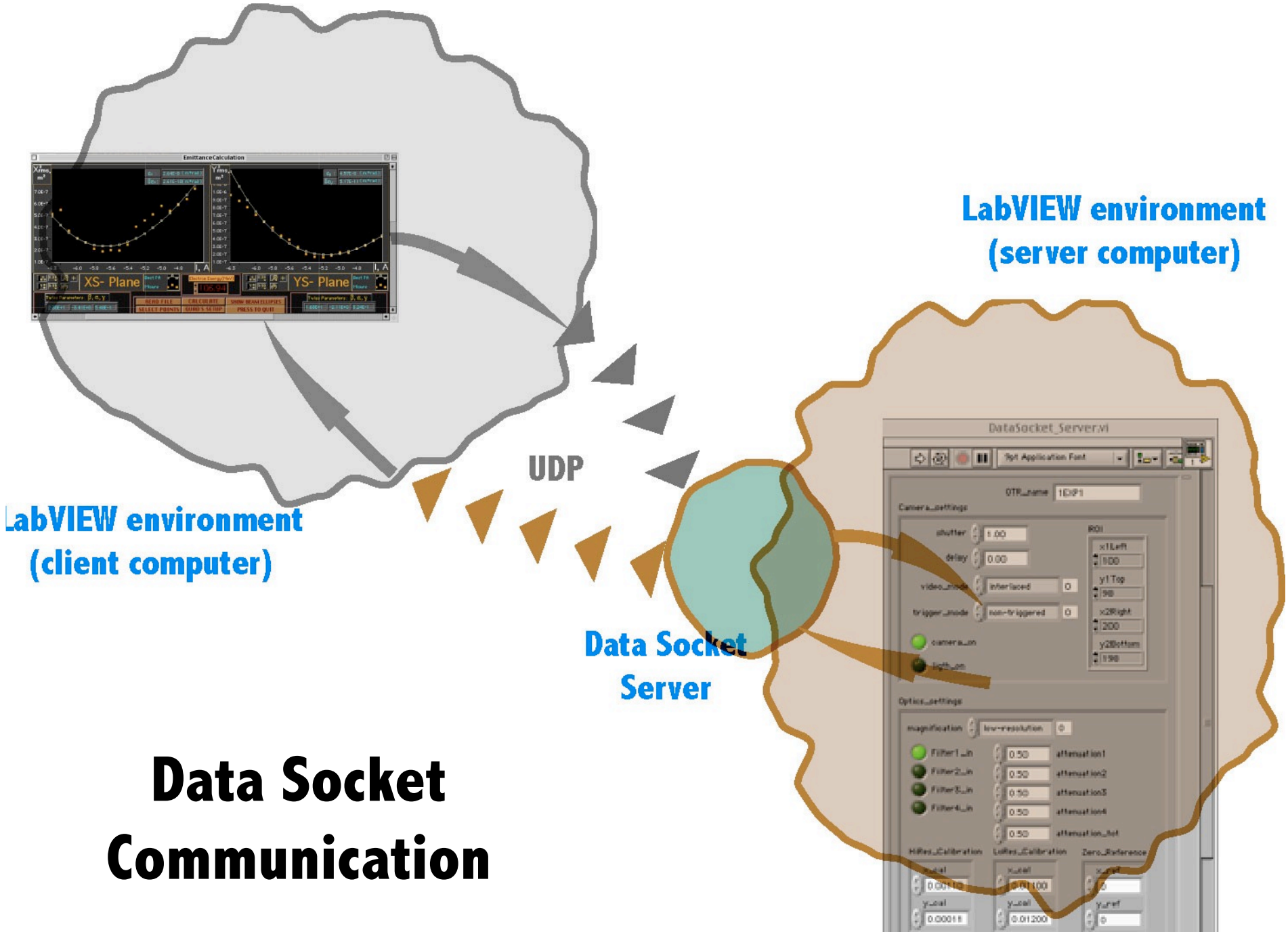
VI-Server Communication



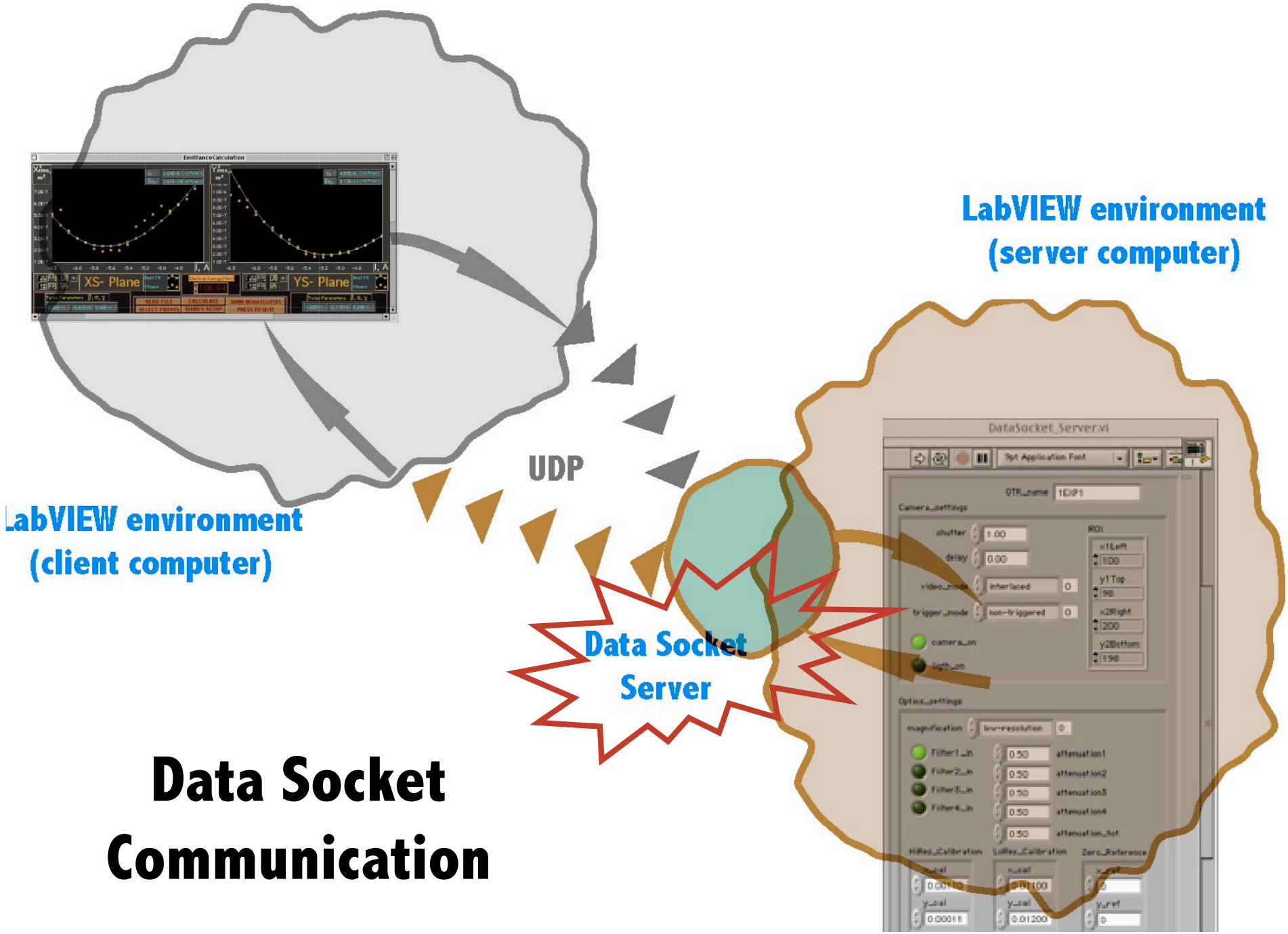
VI-Server Communication



VI-Server Communication



Data Socket Communication

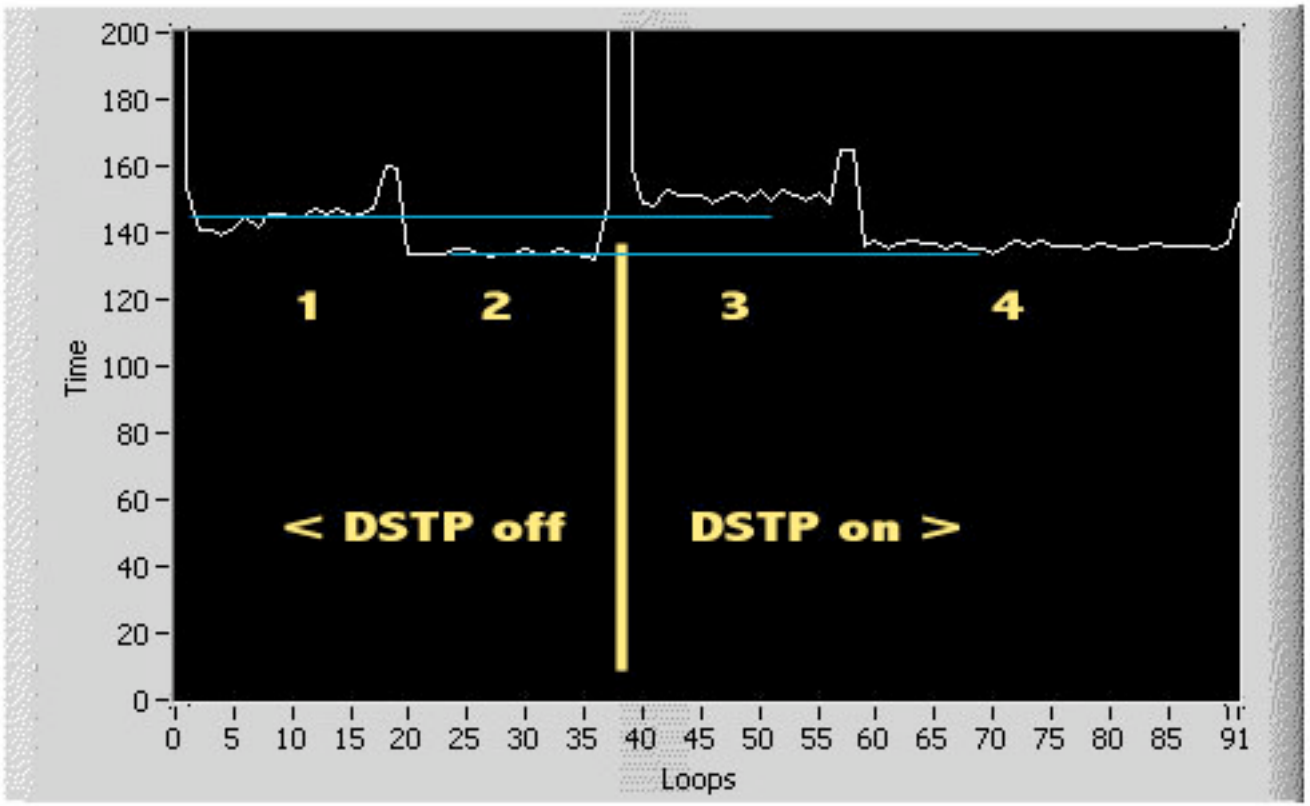


Data Socket Communication

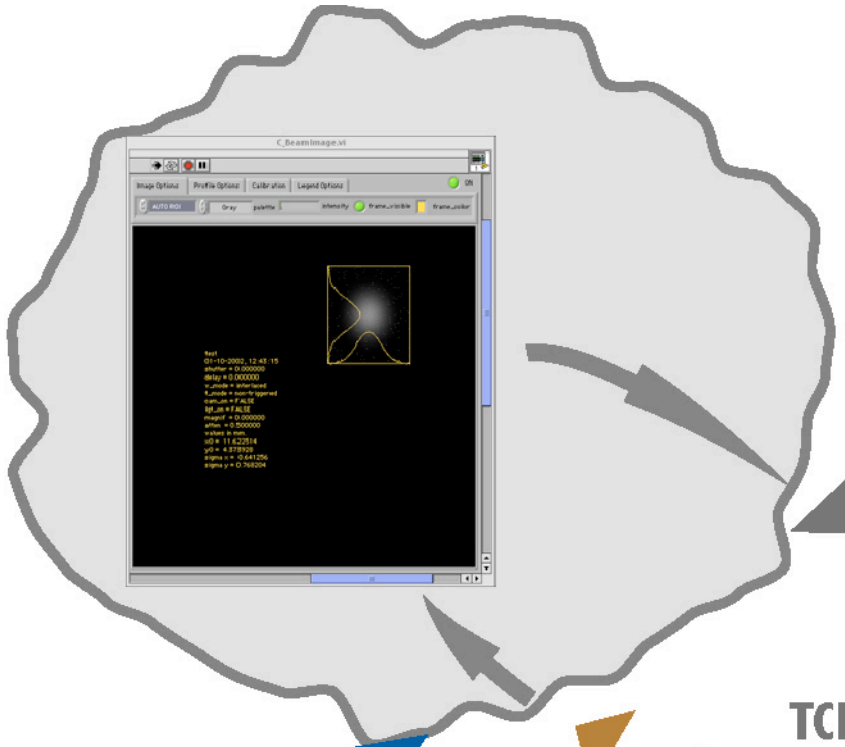
Timing Diagram

Time needed for a loop of the Beam Image server:

1. Data Socket off, display update on
2. Data Socket off, display update off
3. Data Socket on, display update on
4. Data Socket on, display update off



Communication with DOOCS



Data exported to DOOCS
using shared disk (TIFF, XML files)

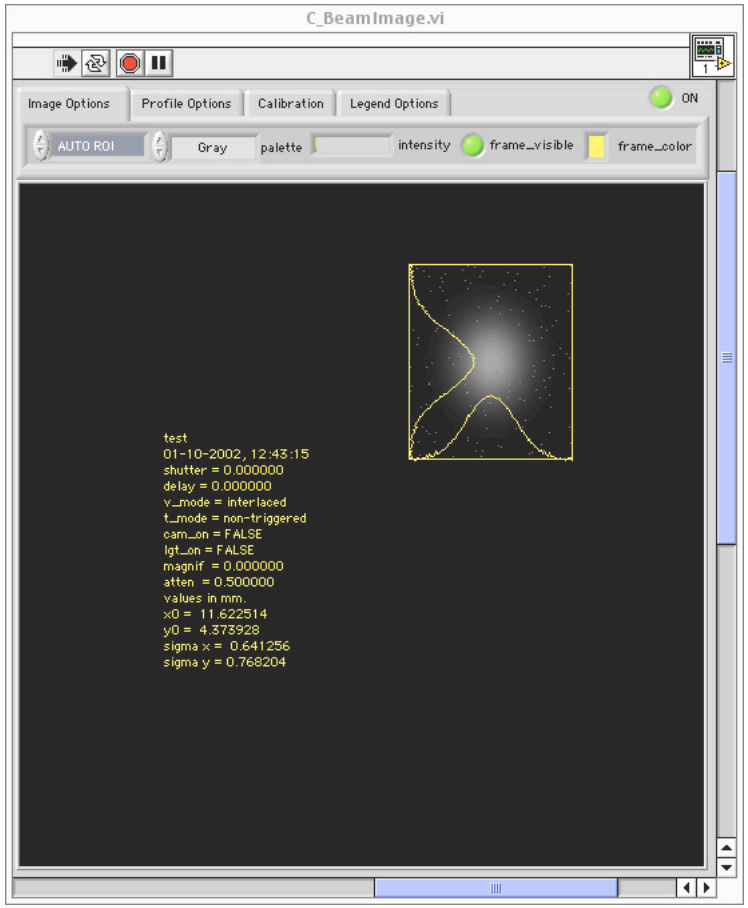
TCP/IP

Mailbox "on file"

DOOCS interface to LabVIEW
to send commands to DOOCS

HTTP Interface

LabVIEW Panel for the Consoles



HTTP Interface

WebBrowser interface for remote operations and web publishing

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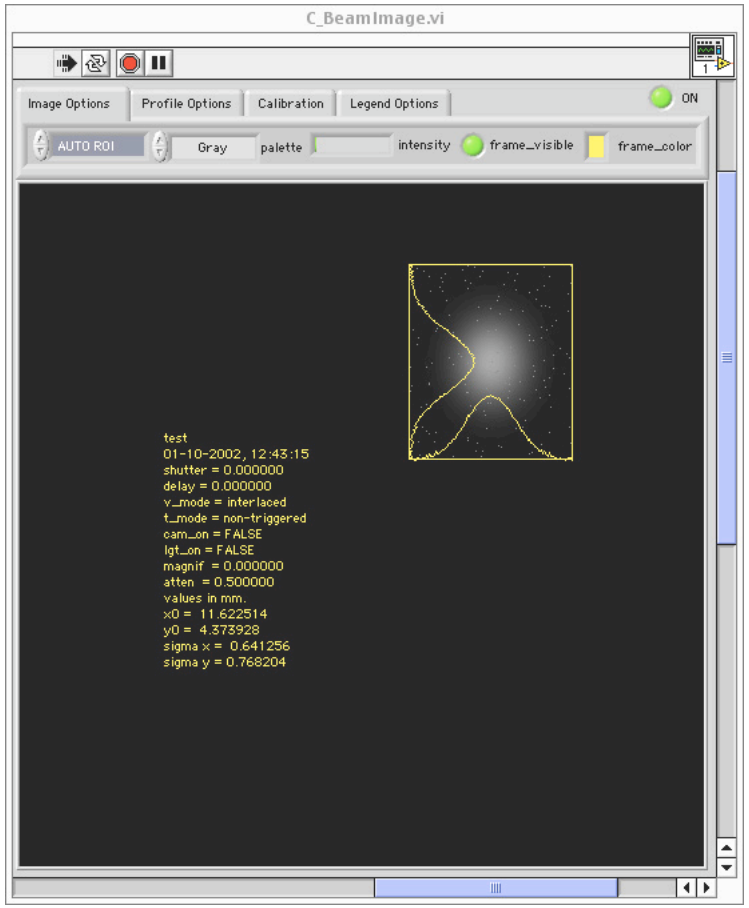

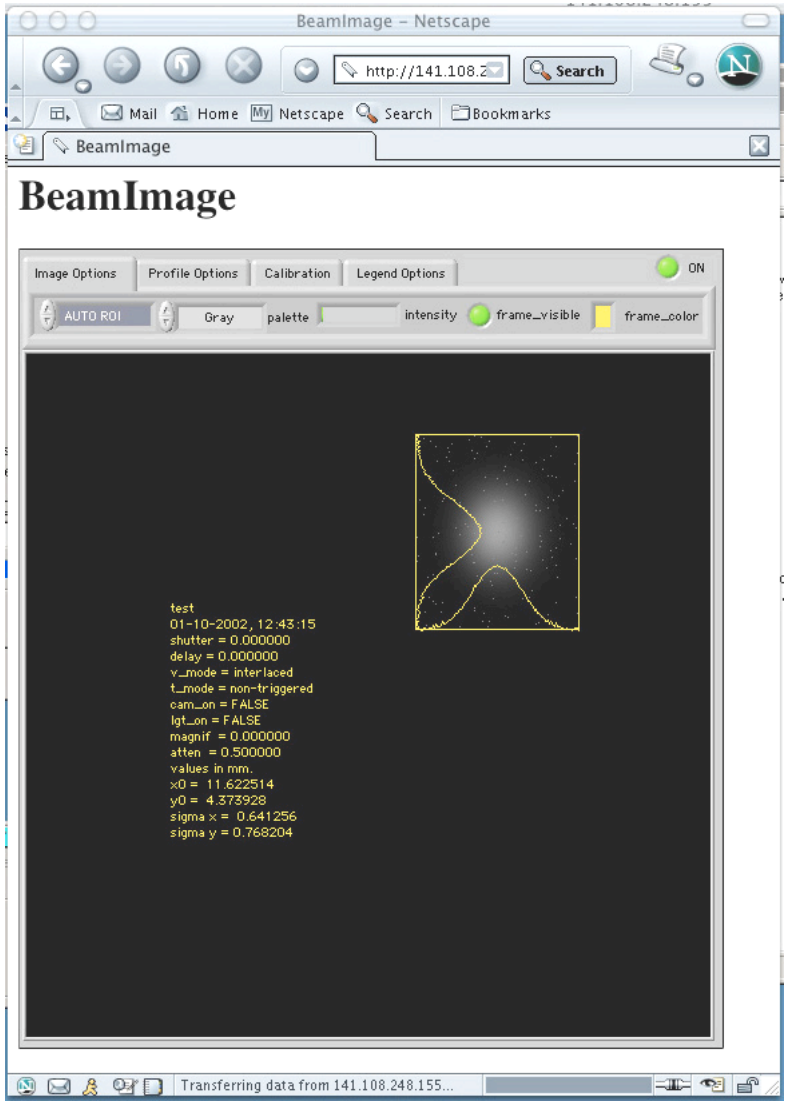

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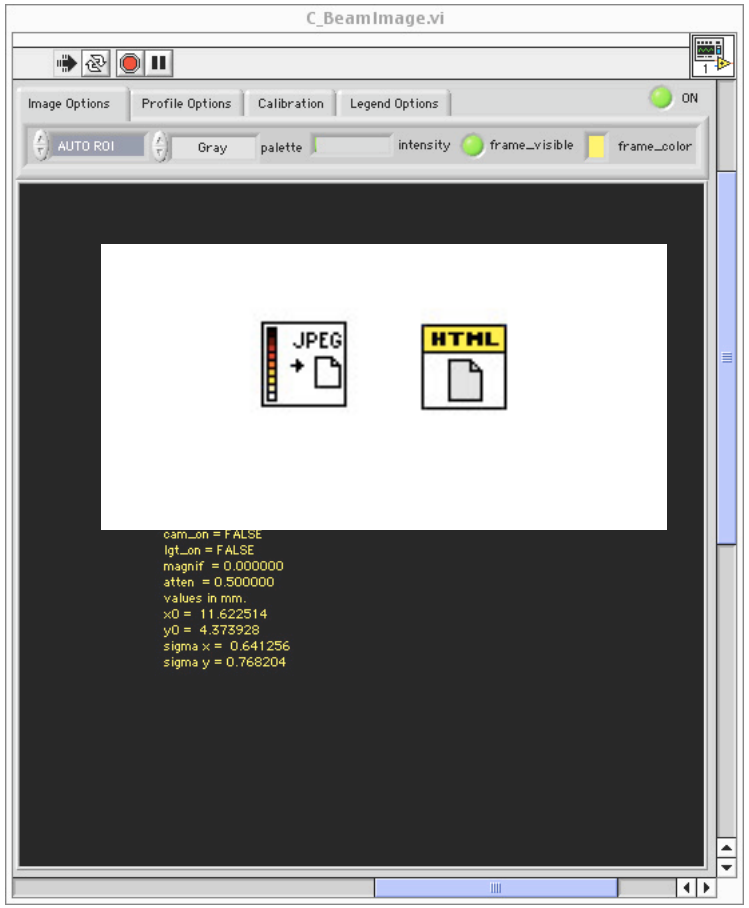

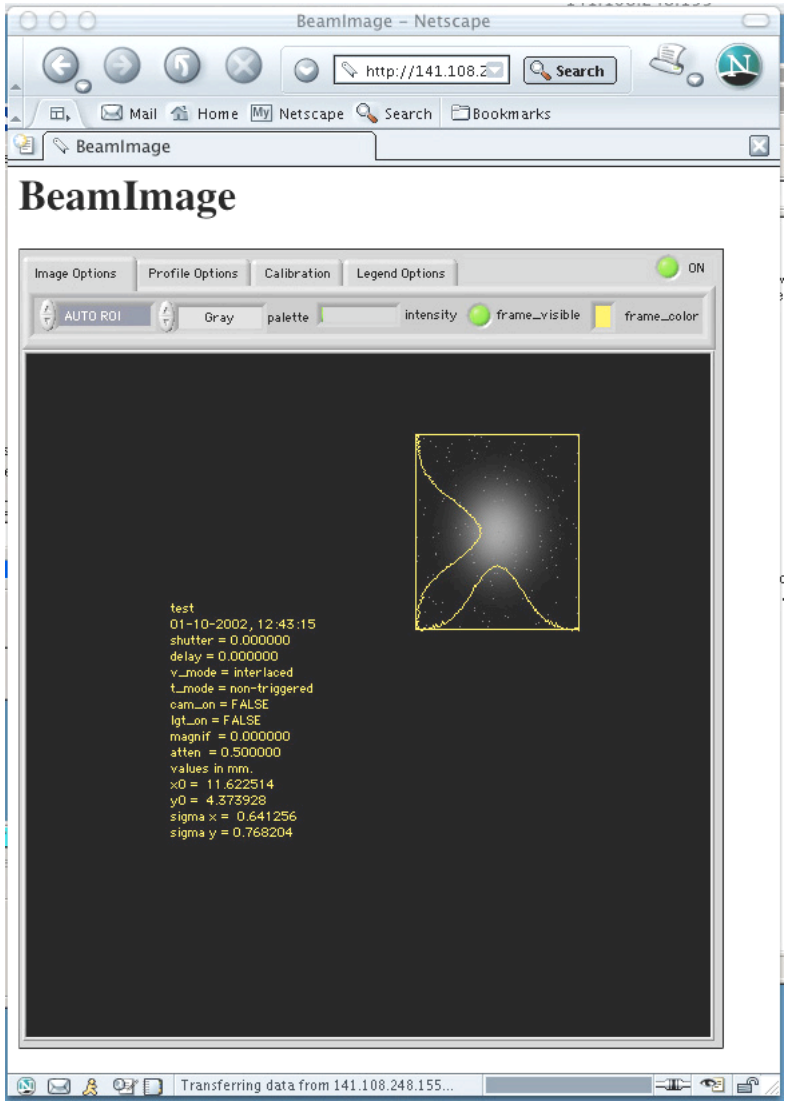

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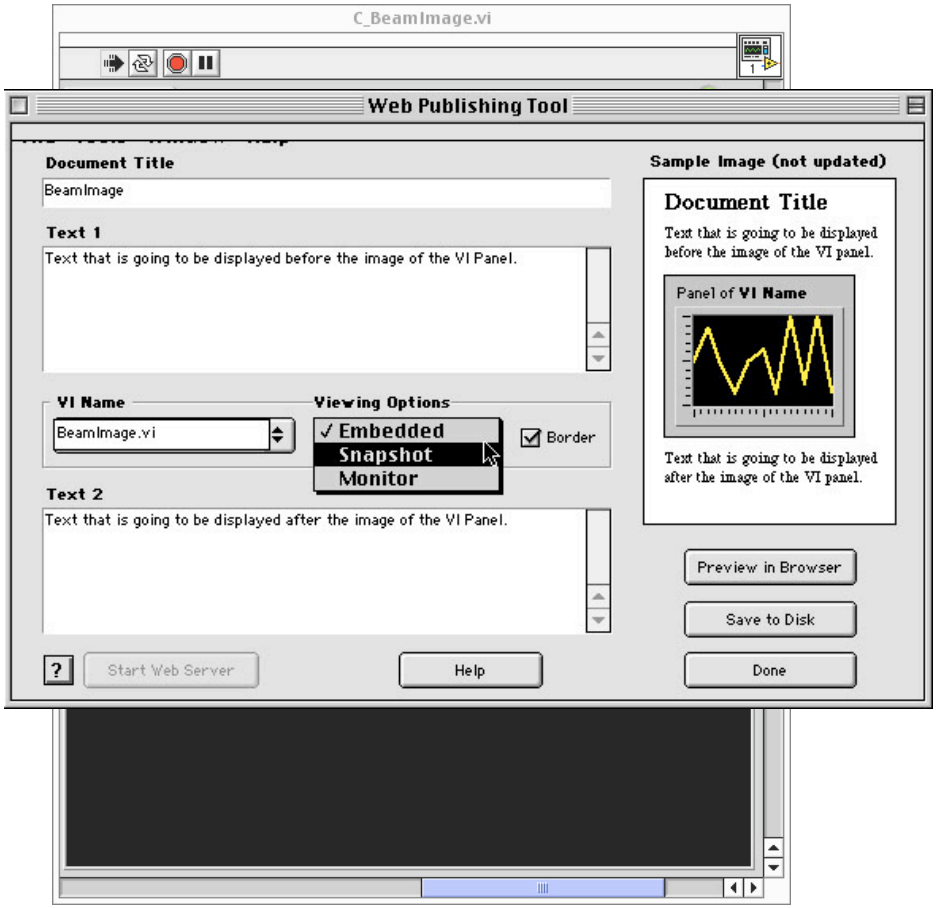

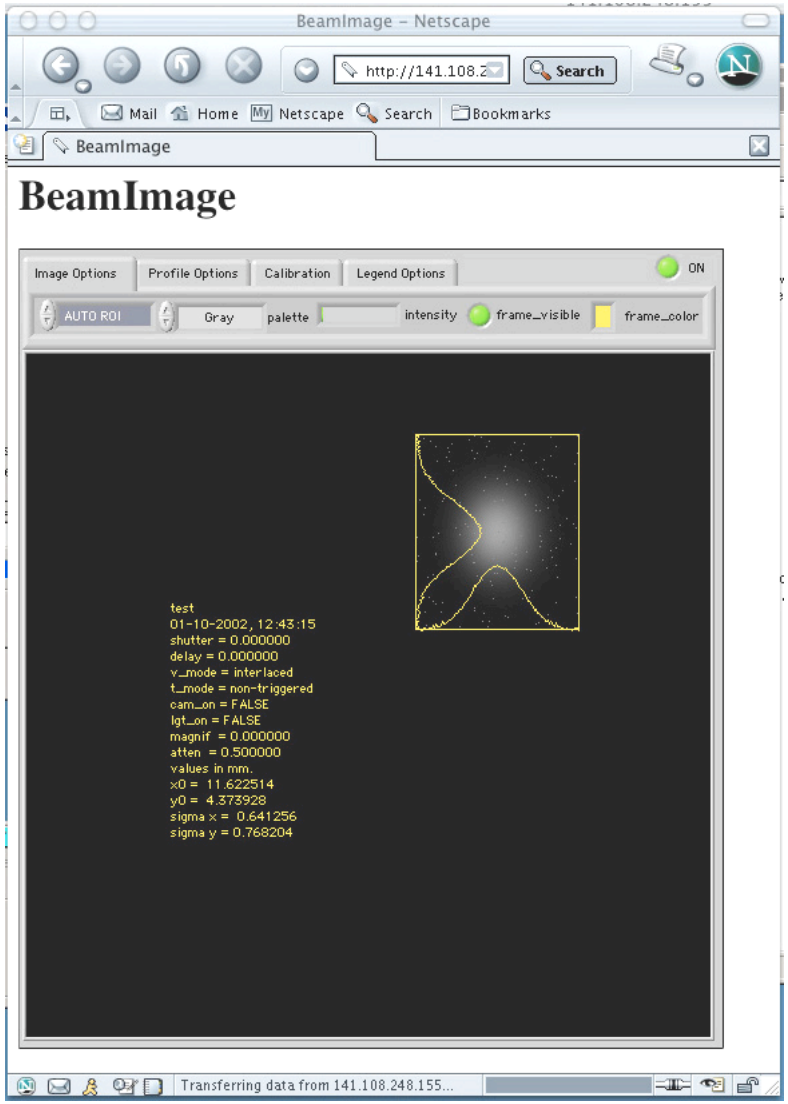

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- our application has been “traveling” from one platform to another without loss of performances
- evolution of PC software and development systems allows to EASELY add network capabilities to our applications
- several protocols and communication solutions can be implemented at the same time with limited programming efforts