Status and future work for the LLRF server

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Installations

- **IlrfCtrlSrf**
  - FLASH (5), AMTF (4), PIZT, TESTSTAND

- **IlrfCtrlNrf**
  - FLASH RF GUN, XFEL RF GUN, KLYT0

- **IlrfCtrlRegae**
  - REGAE, REGAE-SC

- **IlrfCtrlCmtb**
  - IlrfCtrlCMTB, IlrfCtrlCMTB-CW

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Server Changes – Functionallity

• Support for PIEZO
  – Different configuration from station to station

• Support for DOOCS package system
  – Available via standard apt-get command

• DAQ and Timing information available via ZeroMQ
Server Changes – Functionality

• Adjustments of server functionality to follow hardware modifications

• Map file and firmware compatibility checking

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Server Changes - Versioning

• **Versioning system** (based on Semantic Versioning 2.0.0 http://semver.org)
  – Three position version number
  – Data and time of server compilation
  – Metadata

```plaintext
llrfCtrl_Server eq_init_prolog 13:26.18 10.04.2014 -> =
llrfCtrl_Server eq_init_prolog 13:26.18 10.04.2014 -> =
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```

• **Available in RF_INFO location**
Server Changes – Source Code Structure

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Server Changes

• Source code moved to SVN
  – Tags for each installed version

• For FLASH, AMTF the same binary file for all stations in one system
  – Different boards number and board locations (ex. ACC139)
  – Different PIEZOD configuration

• Configuration available via conf (properties with _ at the beginning), lmap, dmap and map files
Redmine Projects/Issues

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![Redmine screenshot](https://mskredminesrv/project/issues/)}
Server changelog

1.6.16
CAV location
  • corrected support for PIEZO

1.6.15
ALL location
  • server recompilation due to DOOCS library update

1.6.14
MAIN location
  • added: SP_CORR.ENA, SP_CORR.DELTA, SP_CORR.QL
LFF location
  • removed all history
ORC location
  • removed all history
CAV location
  • removed: PROBE.AMPL.SAMPLE_X, PROBE.PHASE.SAMPLE_X, VFORW.AMPL.SAMPLE_X, VFORW.PHASE.SAMPLE_X, VREFL.AMPL.SAMPLE_X, VREFL.PHASE.SAMPLE_X
CTRL location
  • added: BEAM_START_BL1, BEAM_START_BL2, BEAM_START_BL3
ALL LOCATIONS
  • corrected bug with segfault generated if client ask about incorrect buffer number

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Problems

- Different hardware configuration
- Problems with DOOCS
Future work

• Minor modifications
  – Properties names unification
  – Properties cleanup
  – Properties description, values limitation

• Updates of server according to new, control system independent architecture

• Updates of server due to bug fixing

• Updates of server due to user requirements
Future work

• Updates of server due to hardware modifications
• Updates of server due to DOOCS updates for example D_spectrum update
• Updated of server due to new Timing system functionality
Automatic update of all systems

• Different cases
  – Software bug fixing, DOOCS update – new binary file but configuration change not required
  – Hardware updates – update of configuration files required
  – Implementation of new server functionality – update of configuration files required
Thank You

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