

GenICam London Meeting Minutes – 2015-04-30/2015-05-01

1. Homework Status/Voting Members

- Active Silicon – Meeting host, SFNC proposal
- Automation Technology – SFNC proposal
- Allied Vision – GenTL Validation Framework , SFNC proposal
- AVAL DATA – SFNC proposal
- Basler – GenApi 2.4.1, GenApi 3.0, SFNC proposals
- Baumer – SFNC proposals, GenApi 3.0
- Euresys – SFNC proposal
- JAI – PFNC reference images
- MathWorks – GenApi 2.4.1
- MATRIX VISION – GenApi 2.4.1, GenApi 3.0, GenTL 1.5
- Matrox Imaging – SFNC 2.2, SFNC proposals
- MVTec – Administration, 3D demo, GenApi 2.4.1, GenApi 3.0, GenTL SFNC proposals
- National Instruments – SFNC proposal, deployment rules, GenApi 3.0
- Pleora – SFNC proposals, GenApi 3.0
- Point Grey – SFNC proposals
- SICK – 3D demo, SFNC proposals
- STEMMER IMAGING – GenCP 1.1, GenTL 1.5, GenApi 3.0, SFNC proposal
- Teledyne DALSA – SFNC proposals, GenApi 3.0, PFNC 2.0
- Toshiba TELI – GenApi 3.0, TLProxy

2. GenApi v3.0 – Status & Roadmap (Fritz Dierks, Basler)

- GenApi v2.4.1 released in Feb 2015
 - Should be the final v2.x release
- GenApi v3.0 Status
 - After 2.5 years of work we're nearly there
 - Changed exception hierarchy
 - Versioned name space "GenICam_3_0"
 - Updated Windows build scripts (using PowerShell)
 - Testing compiler interoperability
 - Build runtime with main compiler
 - Build test-part with different compilers
 - Main compiler for GenApi v3.0 is VC120
 - Supported compilers: VC80 and higher
 - IUserData: User supplied value to each node
 - Extended IDs for GEV event adapter
 - Purchased XSDe license
- Open issues
 - Remove subminor version from DLL names
 - Log4Cpp compiler version dependence
 - Make GENICAM_COMPILER persistent

- Eliminate GENICAM_ROOT infrastructure
- Get rid of _64 suffix in the CLSerXXX file names
- Missing GenCP CLProtocol DLL
- Add missing Python binding
- Add missing error catchers
 - Ensure that old (even pathologic) XML files work
- 86 TODOs left in the source code
 - Results in 6 homework packages
- Add missing OS support for ARM and OS X
- Definition of the default values of XML elements (*Silvio Voitsch, Baumer*)
 - Put all definitions in GenICam standard (i.e. leave double definitions in schema file) -> no need for new schema version
 - Describe default values within a table, e.g., in the appendix, and add links from feature sections to this table
 - Clarify description of DisplayNotation and DisplayPrecision for float formats
 - Clarify ValidValueSet in standard (and adapt comment in schema file)
- Clarify license text (*Ryan Robe, NI*)
 - Rebuilds (same code, but different tool chain)
 - Unsupported platforms and compilers
 - Out-of-cycle releases (similar to bug fixing)
 - Backporting (currently not covered in license)
 - Idea: Introduce continuous integration for bug fix versions
 - Force using the official binaries
 - Necessary: Review by module maintainer and passed test runs
 - Discussion continued in Marketing&Operations session, see below
- Distribute final homework packages incl.
 - Linux issues
 - Cosmetics
 - Test issues
 - Code Cleanup
 - Releasing for all officially supported platforms (incl. ARM hard&softfloat)
- Roadmap
 - Release candidate in June 2015
 - Official release before “summer break” 2015

3. Marketing & Operations (*Christoph Zierl, MVTec*)

- Membership/Trac issues
- GenICam mailing list moved to genicam@lists.stemmer-imaging.de
- ToDo: Split repository into Code and Documents to speedup SVN checkouts
- Review deployment rules in GenICam License
 - Define stricter rules about releasing private builds
 - All agreed about following draft wording: *“All bug fixes (and changes regarding the platform support) shall be tested and committed by the module maintainers. Once the code change is in the code repository, private builds can be made using the repository code provided the official way to create a private name space and private binary names are used. Additionally, the self-*

generated release must clearly indicate the snapshot version used and state that it is not an official release.”

- ToDo: Develop final proposal, then start voting about updated license text
- Review GenICam “Versioning Jungle”
 - ToDo: Put current versioning table to Trac for further review
 - What is a good versioning for the complete GenICam package? Up to now the GenICam package version follows the version of the GenApi reference implementation...
- Marketing issues
 - Press work: Articles about GenICam 3D, see <http://www.vision-systems.com/articles/2015/02/genicam-3-0-release-opens-doors-for-3d-machine-vision-cameras.html>
 - Upcoming presentations at SPS Parma and LASER Photonics World
 - Need for more tutorials, e.g.,
 - „GenICam in a nutshell“
 - „How to interface a 3D camera with GenICam?“
 - More existing GenICam presentations should be uploaded to web server
 - ToDo:
 - Update/restructure info at www.genicam.org and Wiki
 - Review and update Wiki content
 - Review content from old GenICam flyer and publish it
 - Press work about new GenICam releases
- Open certification issues
 - SFNC Certification
 - Validate device XML against SFNC reference XML
 - Schematron tools are already available
 - GenTL Certification
 - Self-certification procedures
 - GenTL Validation Framework (under progress, see above)
 - Prove interoperability with other GenTL implementations

4. *GenCP (Rupert Stelz, STEMMER IMAGING)*

- GenCP v1.1 already released
- Issues for next version
 - Stacked read/write
- No roadmap for v1.2 yet

5. *GenTL (Rupert Stelz, STEMMER IMAGING)*

- GenTL v1.5 Draft 7 available
- Roadmap
 - Resolve issue regarding device access status, then
 - Provide RC for v1.5 in May 2015
- Topics for GenTL v1.6
 - Flag discussions (e.g., signal that Producer is capable to handle newly announced buffers during acquisition)
- Port TLProxy to Linux and OS X (Kazunari Kudo, Toshiba TELI)

- TLProxy as a logger between Producer and Consumer
 - Extended CMake files
 - Tested with TLSimu and SimpleNoDisp
- Validation framework (*Tim Handschack, Allied Vision*)
 - Status
 - No clear differentiation between unit and integration testing
 - With GenTL 1.4 now more error codes are available
 - Proposal: Different kind of tests
 - Function declaration tests
 - Enumeration tests
 - Functional behavior tests
 - Open topics
 - How to certify GenTL Producers with GenTL < v1.4 ?
 - Split development tests from certification tests
 - *Go towards GenTL certification*

6. GenTL SFNC (*Christoph Zierl, MVTEC*)

- Open issues for v1.1
 - Adapt to changes in GenTL v1.4 and v1.5
 - Timeouts for Interface-/DeviceUpdateList
 - New features for better GEV IP-Assignment
 - Version info of implemented TL standards
 - Use generic selector in System and Interface module
 - Do we need GenCPVersionMajor and GenCPVersionMinor? Not on System level, but maybe on Device level as DeviceGenCPVersion
 - Additional buffer handling mode “NewestOnly”, see proposal on Trac
 - Make sure that enumeration numbers in GenTL are in sync
 - Add GenTL module events, see proposal on Trac
 - ToDo: Review the need for “TransferEnd” (equal to “NewBufferAvailable”?)
- Roadmap
 - Work on GenTL SFNC v1.1 draft as soon GenTL v1.5 RC is available

7. SFNC (*Stephane Maurice, Matrox Imaging*)

- 3D extensions for SFNC 2.3 (*Mattias Johannesson, SICK*)
 - Add “Reflectance” as new value for ImageComponentSelector to separate standard 2D intensity image from processed Linescan intensity
 - Add RegionSelector:ProcessingRegion
 - Add “Pixel” as new value for Scan3dDistanceUnit
- Now, automatically generated PFNC header available at www.genicam.org
- PFNC reference images (*Dave Reaves, JAI*)
 - Sample image generator for ramps, color bars, and “Lena’s hat”
 - Supporting various Bayer and Yuv formats
 - Results in 762 reference images (plus 60 TIFF images)
 - ToDo:
 - Implement missing 75 PFNC formats

➤ Test reference images

- Overtriggering proposal (*Mattias Johannesson, SICK*)
 - Motivation: Get notified about invalid triggers
 - Add new values for EventSelector incl. LineTrigger
 - Add new value "Once" for EventNotification
 - Add new values for CounterEventSelector
- Multi-slope exposure proposal (*Tim Handschack, Allied Vision*)
 - Add new value "MultiSloped" for ExposureMode
 - New ExposureSlope* features
 - Conclusion: Introduce specific HDR category
 - ToDo: Continue finetuning the proposal
- *LinePitchEnable* (*Eric Gross, NI*)
 - Vote 6:2 for staying with name LinePitchEnable (vs. LinePitchControlEnable)
 - Conclusion: ready for inclusion in next SFNC release
- Generic logic block proposal (*Damian Nesbitt, Point Grey*)
 - Motivation: Combining different signals in the camera
 - Modeled based on LUTs
 - Proposal with new LogicBlock* category including example
- PFNC
 - Duplicate all existing pixel formats with msb postfix?
 - Idea: Use a certain bit in the ID to identify the msb formats
- Generic Firmware update (*Thies Möller, Basler*)
 - Goal: Allow generic software to update the firmware on a device via GenICam
 - Conclusion: Remove JSON from the proposal and switch to an XML/schema approach (new XSDe schema license is needed)
- *Firmware Signing* (*Eric Gross, NI & Thies Möller, Basler*)
 - Add certificate-based mechanism to sign firmware versions
 - Conclusion: Continue work
- 3D Calibration (*Mattias Johannesson, SICK*)
 - No progress since last meeting
 - ToDo: Continue work on new proposal
- Roadmap
 - Next release will be SFNC v2.3
 - Target date for release is after next meeting in Chicago (Oct 2015)

8. *Homework session*

- Homework list/items
- Next meeting: October 2015, hosted by CEI / AIA in Chicago

9. *Lighting Standard in association with AIA (Peter Bhagat, Gardasoft)*

- Initiate lighting standard group with five sub groups
- Concern whether GenICam too complex for lighting companies?
- Need command, action and event messages, maybe use GenCP?
- Support for different TLs like Ethernet, RS-232, CoaX and USB

- Extending SFNC?

10. Camera Link Issues in association with AIA (Reynold Dodson, BitFlow)

- Camera Link on FPGA
 - Initiate plug-fest testing (at least for FPGA-based CL products)?
- HDR/SDR mating
 - Clarify dimensions and make them recommended for new designs