GenICam Meeting Minutes

Munich, April 21th – 23th 2009

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GenICam/GigE Vision Meeting Attendees

April 21 to April 24, 2009
SkyMeeting/Events over Munich, München, Germany

Company	Representative
Basler	Fritz Dierks
Basler	Thies Möller
DALSA	Eric Carey
e2v	Frédéric Devriere
EMVA	Cor Maas
EMVA	Patrick Schwarzkopf
Euresys	Jean-Michel Wintgens
Impuls Imaging	Peter Hengel
Impuls Imaging	Peter Stregle
JAI	Karsten Christensen
Kappa	Gerhard Hoffmann
Kappa	Andreas Koch
Leutron	Jan Bečvář
Leutron	Stefan Thommen
MATRIX VISION	Stefan Battmer
MATRIX VISION	Uwe Hagmaier
Matrox	Stephane Maurice
MVTec	Thomas Hopfner
MVTec	Ivonne Puhlmann
MVTec	Christoph Zierl
Pleora	Vincent Rowley
Sensor to Image	Werner Feith
STEMMER	Sascha Dorenbeck
STEMMER	Rupert Stelz
SVS-VISTEK	Eckhard Kantz
SVS-VISTEK	Gerd Reichle
VRmagic	Thomas Ruf

GenICam Meeting – Day 1

Tuesday, April 21, 2009
SkyMeeting/Events over Munich, München, Germany

Welcome (Christoph Zierl, MVTec)

- Introduction of persons
- Welcome note by Olaf Munkelt, managing director of MVTec
- Homework review
- Established list of new voting members:
    o Basler
    o DALSA
    o Leutron
    o MATRIX VISION
    o Matrox
    o MVTec
    o NI
    o Pleora
    o STEMMER

GenApi Status (Fritz Dierks, Basler)

- Maintenance release 1.1.2
    o Release candidate RC4 was accepted by all contributing members
    o The following Mantis bug entries have been fixed: #373, #376, #364, #363, #292, #291, #290,#289, #20, #356,#352, #338, #359, #353, #354, #339, #279, #284, #283, #286, #336, #271, #127, #287

- Bugfixes in v1.2
    o 11+2 Mantis issues fixed
    o Bug fixing in two branches is very expensive
    o The next release should be v1.2
    o Maintenance release 1.1.3 should be avoided
    o The following Mantis bug entries have already been fixed: #375, #361, #351, #349, #360, #110, #99, #346, #334, #108, #278, #125, #378

- New features in v1.2
    o 64 new Mantis feature entries resolved since v1.1
    o Test code grows with implementation code
    o #138 : Get a list of supported schema versions
        ▪ New method `GetSupportedSchemaVersions()`
    o #282 : Multiplexer functionality for float nodes
    o #350 : Add <pValueDefault> to integer and float nodes
    o Improve XML file caching
        ▪ XML loading is speeded up by factor 4 to 5
    o #340 : Logger for debugging dependencies
    o #281, 369 : GenApi persistence code – error handling
        ▪ Extended the error handling in LoadFromBag method

- o #048 : Extend <Representation> to IP, MAC
  - ▪ New format used in `FromString()`/`ToString()` for IP and MAC addresses
- o #347: Introduce <DocuURL>
- o #367 : Add a `HasInc()`/`GetInc()` method to IFloat
- o #381 : Attach float numbers to EnumEntries
- o #311 : Add Int/Enum alias access helpers to CFloatPtr
- o Multi-Type support subcommittee (Stephane Maurice, Matrox)
  - ▪ Deprecate raw/abs by float increment
  - ▪ A list of valid values and the range (min, max, inc) should be available
  - ▪ Multi-type support will not be added to the upcoming version v1.2
  - ▪ The int/enum alias support on IFloat will be kept
  - ▪ ACTION: Add a new element <ListOfValidValues> for float and integer nodes (and their derivative nodes) to the schema, thus making sure we can add in a later version of GenApi at least a restricted version with a constant list of valid values without having to change the schema. In the meantime the element is ignored by the code (Basler).
  - ▪ ACTION: Provide a first sketch how a solution dealing with a list of values may look in a future version (Basler)
  - ▪ ACTION: A <pCastAlias> element will be added to support that in order to avoid backward compatibility issues because the <pAlias> has a broader meaning than a strict "feature A can be casted to feature B" definition (Basler)
- o #370 : Extend PolyInteger pointers to IFloat
- o #342 : Rename FloatNotation and Precision
  - ▪ Rename <FloatNotation> to <DisplayNotation> and <Precision> to <DisplayPrecision>
- o #105: Register <pIndex>
- o #241, #368 : Introduce `GetPrincipleInterfaceName()`
  - ▪ New method to query the type of an Interface
- o #343 : Let GenApi client choose a max size for cached chunks
  - ▪ Set `MaxChunkCacheSize` to -1 to set max size automatically
- o #357 : Add a method to chunk adapter to clear caches
- o #288: SwissKnife: lower case variable names
  - ▪ In schema 1.0 variable names are always converted to upper case
  - ▪ Newer schema supports mixed case variable names
- o #105: SwissKnife <Constant> and <Expression>
  - ▪ Now it is possible to define constants and expressions for SwissKnife/Converters
- o #335: Extend (Int)SwissKnife/(Int)Converter variables
  - ▪ Give access to non-value items in SwissKnife formulas
- o #371: Static pointer not inheriting from CNodeMapRef
- o #343 : Add extensions to make GenApi run with Pharlap
- o #355 : Add a method to check if a node is a feature
- o #380 : Control feature exposure in static use case
- o #377 : Renovate ICommand behaviour
- o #383 : Support self clearing enums
- o #384 : Introduce pIsNotCached element
- o #335: Batch access to multiple registers
  - ▪ The write commands flowing through the Port can be recorded into a PortWriteList, which can be replayed
  - ▪ The transport layer may pack the replayed write commands into a single network packet

- ACTION: Check how to implement batch access to multiple registers for GenTL
- #372 : Ports may be features now
- #355 : Make the lock object publicly accessible
  - Improves thread-safety
- #382 : Allow callbacks to fire outside the lock guarded area
  - Improves thread-safety
- #379: XML injection / glue logic
  - Adds possibility to merge two XML files into one and to provide access to hidden registers by new method `LoadFromFileInject()` and attribute `Merge`
  - This would allow to define some kind of Glue layer
  - Conclusion, that this feature should be deferred for a later GenApi release
- ACTION: Create meta project and integrate project file generator to build/test system (Cmake)

Camera Link Support (Fritz Dierks, Basler)

- Presentation of test results
  - First prototype works with Matrox MIL/Intellicam, DALSA CamExpert, NI IMAQ, and Basler pylon viewer
  - Still problems with state-less DLL, error management, binaries for different operating systems, fixed timeout parameter, C++ interface
  - Ready for Vision Show in Stuttgart in November?
  - Present results on Camera Link committee meeting in June
  - Discussion about different feature names for the critical features like PixelFormat on camera and frame grabber side
  - ACTION: Provide SFNC for CL with Tap Geometry, Configuration, Time Slots, Baud Rate

Presentation of the Wiki (Christoph Zierl, MVTec)

- First prototype based on TWiki already online
- Review of changes?
- Support of syntax highlighting?
- Discussion whether to switch to trac / Subversion (bug tracking tool including Wiki and access to Subversion repository) instead of Mantis/CVS/TWiki
- ACTION: Rename Wiki website to genicam-wiki.mvtec.com
- ACTION: Add meetings and timeline, attendance, conclusion, history of meetings, …
- ACTION: Add meeting planer
- ACTION: Add information about ftp server, Mantis server, how to subscribe to mailing list, maybe even mailing list archives
- ACTION: Add member list
- ACTION: List subcommittees with member companies
- ACTION: Evaluate trac which combines Wiki and bug tracking system

GenApi v1.2 Roadmap (Fritz Dierks, Basler)

- First round of discussion about releasing v1.2

GenICam Meeting – Day 2

Wednesday, April 22, 2009
SkyMeeting/Events over Munich, München, Germany

DOs and DONTs (Jan Bečvář, Leutron)

- Discussion about endianess, see also below
  - ACTION: Put revised DOs and DONTs document in the standard text

GenTL Status (Rupert Stelz, STEMMER)

- 3 new functions for the port module: `GCGetNumPortURLs`, `GCGetPortURLInfo`, `GCSetPortActiveURL`
- Roadmap
  - Add Bayer conversion?
  - ACTION: Define SFNC names for specific layers and acquisition modes

GenTL Open Problems (Jan Bečvář, Leutron)

- General
  - Open points should be always added to Mantis
  - The next GenTL version should support devices, which cannot store the data at any address, but need e.g. some specific alignment
  - All open device handles remain valid if `IFUpdateDeviceList()` is called
  - ACTION: Add symbol decoration and visibility to the standard text
  - ACTION: Fix the header file (avoid stdcall on 64-bit)
  - ACTION: Clarify the standard text for the known open points
  - ACTION: Provide information in the Wiki

- Header files
  - Client.h should be renamed into GenTL.h
  - GenTL.h and GCTypes.h should be fully C-compatible
  - ACTION: Remove GenApi headers from GenTL headers
  - ACTION: Use the same values for error codes in GenApi and GenTL
  - ACTION: Declare error constants and some other missing definitions
  - ACTION: Fix typos and differing function names
  - ACTION: Vote on the mailing list to accept above changes

- Discussion about endianess
  - Add new feature DeviceEndianessMechanism in node map, which is optional for v1.0 and mandatory for v1.1
  - ACTION: Add new feature GenTL DeviceEndianessMechanism (Enumeration: Legacy, Standard) to Dos and Don'ts

- Discussion about the location of CTI files
  - Use environment variable `GENICAM_GENTL_32_PATH` and `GENICAM_GENTL_64_PATH` as general path, i.e., the installer of a new producer should append the actual directory to this variable(s)

GenTL Roadmap (Rupert Stelz, STEMMER)
- Release of v1.1 planned for autumn (vote on next meeting)

GenApi v1.2 Roadmap (Fritz Dierks, Basler)
- Continued discussion about releasing v1.2
- Release of v1.2 including schema v1.1 planned for July or August
- Do bugfixes based on v1.2 only
- Get camera and library support
- Plugfest on next meeting
- Launch schema v1.1 products on Vision Stuttgart
- In case of problems or less time: Block usage of new schema and delay it until next meeting
- ACTION: Provide a migration guide in the Wiki

Status from Marketing Sub-Committee (Vincent Rowley, Pleora)
- Releasing GenICam as a 'packet', which version number(s) should be used?
- Proposal: Release GenICam v2.0 in Q3 2009 including
    - GenApi v1.2
    - GenTL v1.1
    - SFNC v1.3
- Establishing of a new self-certification sub-committee postponed for next meeting
- Presentation of the latest version of the 1-pager
- The "must" for SFNC usage in a GenIcam compliant product will stay in the text definitively as it was decided originally at the creation of this 1-pager
- Patrick Schwarzkopf new member of the marketing sub-committee
- ACTION: Provide proposal about rules for version numbering
- ACTION: Provide text to EMVA for press articles
- ACTION: Provide an additional 1 pager about the benefits of GenICam

License (Fritz Dierks, Basler)
- Current license text is very old and looks unprofessional
- EMVA offers to generate an official license text
- ACTION: Revise and update license text

Collecting Homework (Christoph Zierl, MVTec)

GenICam Meeting – Day 3

Thursday, April 23, 2009
SkyMeeting/Events over Munich, München, Germany

SFNC (Stephane Maurice, Matrox)

- New categories:
    - In case of discrepancy between the features described in the SFNC and the "GenICam Standard text" the SFNC document prevails
    - ACTION: Rename GEV section to "Transport Layer Control" and move GEV (and eventually CL in it) to subsections
    - ACTION: Move payload size out of GEV section. `PayloadSize` will be located directly in the new common top subsection
- As approved in Pilsen, Raw and Abs features are deprecated. A new increment mechanism for float is now available and should solve the main blocking problems that justified the Raw version in the past
- All the ICommands of the SFNC (except `DeviceReset`) are now (Read)/Write
- There will be no multi-type feature in the SFNC as it was decided when the Abs/Raw feature were created. Instead, a "List of valid values" for the IInteger and IFloat nodes will be supported
- Added features for color transformation
- Added action feature for multiple camera trigger
    - ACTION: Improve description text
- Event / callback handling and event categories naming convention
    - Discussion about naming and providing of events
    - ACTION: Change section about event handling as discussed
- Deprecated the GigEVisionEvent enum of EventNotification to replace it by the more generic and TL agnostic On (vs Off) value as approved in Montreal
- ActionControl features should all have guru visibility
- GEV 1.1 new features were added in the GEV section and a proposal to deprecate a few `GEVSupported`… features and regroup them with a selector
- ACTION: Remove `GevManifestEntryCount` and `ActionCount`
- ACTION: Rename `GevManifestXMLSchemaVersion` to `GevManifestSchemaMajorVersion`, `GevManifestFirstURL` to `GevManifestPrimaryURL` and `GevManifestSecondURL` to `GevManifestSecondaryURL`
- ACTION: Change access of features from 'read-only' to 'read'
- VBA script for SFNC features extraction from Word document was created, but is missing the inclusion of tooltips, description and category for each feature
- ACTION: Provide a XML file generated from SFNC, maybe in Wiki
- Minor changes accepted
- `GevCurrentIPConfigurationLLA`, `GevCurrentIPConfigurationDHCP`, `GevCurrentIPConfigurationPersistentIP`, `GevPersistentIPAddress`, `GevPersistentSubnetMask`, and `GevPersistentDefaultGateway` features changed from expert to beginner visibility as agreed on the mailing list
- Added missing selector for `BalanceRatioAbs`
- Changed visibility of `GevInterfaceSelector` to beginner

- ACTION: Descriptions and tooltips for each feature need to be added
- CL features will not yet be included into SFNC 1.3
- Questions on some SFNC features
    - Separate source and activation for all features? Yes.
    - ACTION: Separate source and activation for all features, e.g., add `CounterEventSource=Line0` and `CounterEventActivation=LevelHigh` and deprecate the compound enum such as `Line0LevelHigh`
    - Should we add `CounterResetSource=AutoReset` (or a new `CounterMode=AutoReset`) ?
    - ACTION: Support a writable `CounterValue` to be able to specify a start value
    - Some Counter, Timer and Line features will be studied for a formal proposal by Leutron and Matrox for SFNC 2.0
- Added support note with direct E-Mail address for questions about the SFNC
- Roadmap
    - RC of SFNC 1.3 at the end of May 2009
    - Final release at beginning of July 2009

General Discussion:

- ACTION: Cleanup repository and re-organize directory structure
- Take two steps in one and use trac as bug tracking tool including Wiki with subversion support?
- ACTION: Evaluate possibility to convert to trac (MVTec)
- ACTION: Migrate CVS to Subversion (MVTec)

GenICam Meeting Wrap-Up (Christoph Zierl, MVTec)

- Homework assignment
- Next meeting will be in Montreal hosted by DALSA, presumably at the end of September or beginning of October 2009