GenICam Meeting Munich, July 11-13, 2005

1Attendees:

- ATMEL: Frederic Mathieu
- Basler: Friedrich Dierks, Hartmut Nebelung
- Coreco: Eric Carey
- Dalsa: Peifang Zhou
- JAI/Pulnix:Michael Krag
- Leutron: Stefan Thommen, Jan Becvar
- MVTec: Christoph Zierl, Milan Rüder
- Pleora: Alain Rivard
- Stemmer: Rupert Stelz, Sascha Dorenbeck

2 Agenda

2.1 Monday, July 11, 2005

11:00 – 13:00
    Reception
    Agenda refinement
    What should be achieved at the meeting end?
    Reports from the contributing members
    Feedback

14:30 – 17:00
    Pleora presentation: GenAPI – JAVA
    Discussion

17:30 – 19:00
    First draft of the standard
    Meaning of IsEnabled
    Uniqueness of feature names

2.2 Tuesday, July 12, 2005

8:30 – 10:15
    First draft of the standard
        "Missing" functionality of the XML part and theory of operation
        What further documentation do we need?
    What parts of GenICam to release?
    Creation of the 1st setup
    Roadmap for the reference implementation

10:30 – 12:30
    "Politics"
        GenICam license

14:00 – 16:00
    "Politics"

Secretary@EMVA
GenICam trademark
GenICam website at the EMVA
Raising awareness
Patents
Logo

16:30 – 19:00
Definition of standard feature set

2.3 Wednesday, July 13, 2005

8:30 – 11:00
Definition of standard feature set

11:30 – 12:30
Definition of standard feature set
Common development
CVS
Responsibility (modules, releases)
Bug tracking
Testing

13:45 – 15:30
Incorporating ASCII commands into GenAPI
Transport Layer
XML registration
Open points (GigE implementation)
CameraLink command protocol driver
Detecting CL cameras
Glue in general
Module structure
Feedback from EMVA
Road map
Next work packages

3 Expectations to meeting

- Basler:
Finish first draft, because GigE depends on it
Fixating the list of features and TLInterface

- Stemmer:
First draft
TLI
Roadmap and Work packages

- Pleora:
Fixing problems with GigE features not matching to GenICam
Putting JAVA to GenICam, because XML may be a limit

- Dalsa/Coreco:
Information on GenAPI implementation
Fixating common features

- ATMEL:
Basic feature set

Common API for TL

- JAI:
  XML   description   overview
  Basic names for common features

- MVTec:
  Image acquisition standard (like TWAIN or DirectShow)
  Is GenICam only to configure but also TL and capture?

Discussion: Is transport layer or image acquisition part of GenICam?
  Deferred.

4 Presentations of work packages

Basler: Documentation of GenICam reference implementation.

Stemmer: Integration of Grenoble work, TLI, DummyGlue, Registry

JAI: TLI for GigE

ATMEL: Validator nearly finished, TLI for Coreco based CameraLink

MVTec: Setup of CVS server, first file set for "everybody" runtime version,
  prototypical HALCON interface to GenAPI/Factory

5 Feedback

Basler/Stemmer presentation at VDMA:
  - Concerns from some companies: if "too" standardized, a price war starts
  - Price does not matter, if features are worth it

Vision Show West:
  "GigE needs XML-specification yesterday, and will get it tomorrow."
  GenICam will be mandatory, if ready till end of July.

IIDC (DCAM): watching very interested

6 Modules of GenICam

XML-specification for GigE
Final signature of TL interface? -> deferred
Discussion

7 Pleora Presentation GenAPI/Java

Cons of GenICam for GigE, one solution: Java
Pros for Java

Discussion:
  Basler: History of development at Basler: Move from Java to XML because of
    maintainence problems with many cameras
  Stemmer: XML can be edited by user, no need to set up a development tool
  Most: Proposed use cases can be handled in XML with help of appropriate GlueDLL

8 Missing XML functionality

New nodes proposed:
  ForwarderNode: forward a value to different nodes (-> Basler)
  ProxyNode: transfer value to different XML file (postponed to later version)

SwissKnife: extend to 2 formulas: one for write and one for read (-> Basler)

Meaning of isEnabled in AccessMode?

```
Flags: R      W       I(mplemented)
       x      x       0       NP
       0      0       1       NA
       0      1       1       WO
       1      0       1       RO
       1      1       1       RW

Locked:        0->W
```

Uniqueness of names: needed in static use case, otherwise compile error
      dynamic case: custom name space first, then std name space

9 First draft of the GenICam standard

Problems with fixed paths in XML to schema. Work around: relative to own doc: ../../ ....
May be problem with XML supplied by camera / TL vendor.
Possibility to use $GENICAM_ROOT ?

```
Replicator Node:    RWL   (Rep)             L: limits/range

                     / | \

                    /  |  \               pMaster for read,range,write
             (pMaster) (pS) (pSlave)       pSlave only for write

              RWL      W      W
```

GUI is not part of GenAPI
      GUI split into 3 parts: 1. Front-end to GenAPI
                                 2. Enumerate devices
                                 3. Container for 1+2 and image display

Self description of XML registry --> Stemmer

Public release: XML + schema + doc

Outlook to transport layers and factory as a preview release

Overview over complete architecture

Doc should be ready on Thursday, reviewed on Friday

10 Setup for associated members without CVS access

Discussion: define only usage and methods of grabbing, not signatures
      rename ImageStream to DataStream (-> Stemmer)

Snapshot of CVS repository as a ZIP file regularly.

First release without all proposed changes soon.

Thursday/Friday: zip file to be put onto Basler ftp incl.disclaimer for changing files

End-user setups: deferred

11 "Politics"

License: What to do to be compliant?
      Check list from GenICam to test against.
      Provide test conditions on request
      Optionally send in testing protocol

In the license: delete description of runtime/development version

3 checklists for compliance tests:

- For cameras,

- For transport layers,

- For software libraries/applications.

Modifications to source only if a diff is provided to GenICam group and differences are clearly stated in patched version.

One maintainer for each GenICam module.

Install at EMVA: secretary, mailing list, web site, ftp server.
        Hand over new member application to EMVA
        Invite EMVA to next meeting

Next meeting is planned to be at Leutron, Zürich in week 39 (26.9.2005 - 28.9.2005)

Secretary of standard group currently is F. Dierks (Basler)

WWW contents will be provided by Leutron:
        Documents,
        Roadmap,
        History,
        List of members,
        License + application form:
                companies only, name, contact, license agreement, patent/IP form,
                company put onto mailing list and web site

Advertising:
        How to spread the word?
        Put draft onto mailing lists: GigE, IIDC, CameraLink
        No active advertising at the moment (deffered to next meeting)
        but rise awareness to promote the standard not a specific product

Patents:
        Statement from Pleora to GigE patent
        To become member one has to declare IP/patents related to GenICam
        Collective patent research from all standard group members.

Trade mark: EMVA will look at this

Logo: all votes for GEN<i>CAM

12 Mandatory/Optional features

GigE bootstrap register mapped to GenICam feature names

Discussed feature groups are optional, but inside a group there are important (recommended) features

Groups:
        Image Layout: PixelType, Width,Height,Top,Left,LinePitch
        Grab Control: general and 1394DCAM
        Analog control: ShutterMode (Fixed,PulseControlled), Gain, AutoGain, Offset,
                AutoExposure, GainBlue,GainGreen,GainRed, AutoWhiteBalance
        Trigger: TriggerMode (Off,Intern,Extern,Software), SoftTrigger, Polarity, Delay,
                InternalRate
        LineScanTrigger: proposal of Leutron due to Zürich meeting

13 System overview

Presentation from Rupert: system overview and purpose of GlueDLL
  GlueDLL to combine Camera- and TL-XML to implement functionality which needs
  access to both XMLs

14 Common development

Bug tracking:
  List of possible systems: gnats, bugzilla, mantis,
  Preferred free software: mantis to be implemented at Stemmer

CVS:
  cvs checkin by module maintainer.

Releases:
  managed by MVTec

Testing:
  to be discussed in Zürich

List of modules:

- GenAPI   Basler
- Factory   Stemmer
- TLSystem   Stemmer
- GUI   ?
- TLCDummy   Stemmer
- TLCBcam   Basler
- TLCGigE   JAI
- TLCPdev   Pleora
- TLCCorecoCL   ATMEL
- Validator   ATMEL
- GenAPI/Java   Pleora
- Configurator   ?

Email:
  Every company will set up a GenICam email: genicam-contact@company.com

15 ASCII node proposed by Tony (National Instruments)

TL interface to be extended with read/write ASCII (future work)
New port for binary instead of register?
--> Command node not only for ASCII but also binary
  Peifang will get in touch with Tony to coordinate work. New proposal at Zürich

16 XML registration

Flip chart with registry overview: same as Grenoble meeting

Proposed: one GlueDLL at one TLI
  If more than one Glue is needed: instantiate a new TLI

Device binding: TLClient-Device
  Bind: XML(Device::DevVendor::Model::ID::...)

Further discussion on mailing list with proposals from Pleora and Stemmer.

17 ATMEL: TLI Coreco CameraLink

Problems with discovery of cameras, manually bind XML to TL?

CL device discovery with proposal from Leutron (Zürich/email)

CL camera vendor needs to provide a protocol driver dll

18 Report on EMVA feedback

- Check for trade mark options.
- Will handle registration
- www content delivered to EMVA which will push it to web site
- Will check if been able to provide mailing list
- Requests both GenICam and EMVA logos on documents -> no problem
- Will meet in Zürich or at Vision/Stuttgart

19 Roadmap

- Next meeting: Zürich, week 39
- TLCDummy by Stemmer soon (Stemmer)
- First draft standard on July, 15th, published next week (Basler et al.)
- First web site @EMVA.org next week (Leutron)
- First release of GenAPI reference implementation (without new changes) next week (MVTec)
- New GenAPI access types (Basler)
- Renaming to be done (namespace…) (Basler)
- CVS directory renaming (MVTec)
- Adapt TLCBcam to new interface (Basler)
- .NET wrapper for TLSystem (Stemmer)
- CVS add from ATMEL (validator+TLCCorecoCL) (ATMEL)
- Setup MANTIS bug tracking system at (Stemmer)
- Check for patents!
- Member application form (MVTec)
- CVS changes until end of week 29 (Stemmer, Basler)
- Install genicam-contact@<company>.com (all)

20 New proposals for Zürich

- More trigger et al. features (Leutron)
- Registry structure (Stemmer)
- Command node (ASCII and binary) in GenAPI (DALSA and NI)
- Camera Link device discovery (Leutron)