QUAREP-LIMI WG10 - 5th meeting - 09/03/2021

Attendees:

Thomas Guilbert, Ulrike Boehm, Michael Nelson, Santosh Podder, Alex Gramann, Elnaz Fazeli, Arne Seitz, Peter Bajcsy, Fazeli, Julia Fernandez-Rodriguez, Erika Wee, Steve Ogg, Kees van der Oord, Rodrigo R Bammann, Konstantin Birngruber, Ciaran Butler-Hallissey, Andrea Bassi, David Grunwald, Caron Jacobs, Juergen Breitlow, Pina Colarusso, Gaby Martins, Caron Jacobs, Rodrigo Bammann, Ali Gheisari, Elton Rexhepaj (23 participants)

Excused: Gerhard Holtz, Julien Record, Gert-Jan Bakker

Agenda:

1. Welcome new participants
2. Agreement on minutes of the last meeting and about the recording of the meeting
3. Review of the last meeting:
   - participants agreement on the content version of IQ_White Paper
   - IDR parameter
4. Lateral and Axial Sampling Rate (LASR)

Minutes:

1. Welcome new participants
   Ciaran Butler-Hallissey, Andrea Bassi, Elnaz Fazeli, Caron Jacobs, Juergen Breitlow, Alex Gramann (chat), Pina Colarusso, Gaby Martins

2. Agreement on minutes of the last meeting and about the recording of the meeting
   Done

3. Review of the last meeting:

   3a. Review the content of the first IQ White Paper

      Prerequisite section:

      *" IQ parameters assessment can only be reached using unprocessed,
         uncompressed, lossless data, and should be Bio-Formats readable."*
      - How do we handle processed data within, e.g., a CMOS camera?
      - Is lossless compressed data fine?
      - On which scopes do we plan to focus first?
      - We should define more precisely goals and who are we talking to.

"IQ parameters assessment directly comes from images, regardless of acquisition or microscope settings, except for lateral and axial sampling rate. All other quality control parameters will depend on other working groups of the QUAREP-LiMi consortium.."
- Communication with the WG2 should be aimed (Detection system performance)

"IQ parameters and their evaluation should not be considered as disqualifying criteria. Each microscopy application needs particular settings that cannot be compared with each other."
- Should we move this point to the top?

"A significant part of the IQ evaluation depends on metadata set up."
- changed to...
"A significant part of the IQ evaluation depends on the associated metadata information. Please follow WG7-Metadata recommendations."

"In the end, all IQ parameters will be considered as features. The quality model will be a function of these features for specific applications (ponderate score)."
- Match the tier levels (see metadata discussions) with different IQ algorithms

- We should use IQ Tiers with IQ Levels (David G)

- IQ is not the appropriate acronym, we should find something else (Michael)

- TG suggests "IQS" for Image Quality Score

    3b. IDR parameter

       - We will use a new acronym: IDR → DRI
       - else: Postponed

4. Lateral and Axial Sampling Rate (LASR)
Postponed

Next meeting: March 23 at 10:30 am (ET) / 4:30 pm (CET)
Zoom link:
https://hhmi.zoom.us/j/9220286547?pwd=OGRWNTFyWjBzMEI5QkZrWUU4TitVdz09

Content of the chat:

De moi à tout le monde: 04:30 PM
Minutes of the meeting :
https://docs.google.com/document/d/1zRq8l87DcqSm1hjwSAnBlqbKwsF46nrSukM7Xcw0N
ZM/edit
Please insert your name in it
Minutes of the meeting :
https://docs.google.com/document/d/1zRq8l87DcqSm1hjwSAnBlqbKwsF46nrSukM7Xcw0N
ZM/edit
Please insert your name in it
De alex.gramann à tout le monde: 04:32 PM
Hi everyone, I'm new to QUAREP-LiMi. Mic is currently broken :/ I'm Alex - I'm the Optical
Design Engineer at CoolLED. I've had some experience in developing LED light sources for
fluorescence microscopy
De Ulrike Boehm à tout le monde: 04:40 PM
The folder with all the table and documents can be found here:
https://drive.google.com/drive/folders/1XykhjZhl-tAuEMFxAjD2Ln8sUdxMWz89?usp=sharing
De Michael Nelson à tout le monde: 04:43 PM
Yeah, not sure how accessible that will be to most users..
My question was more related to what "compression" meant. I had not considered Arne's
definition - I had been focused on compression that does not change the pixel values.
De Pina Colarusso à tout le monde: 04:48 PM
Instead of raw data can we state original data set as acquired on the microscope and if this
is not possible, to have a defined and reproducible workflow that accompanies the
"different-quality" data
De peter bajcsy à tout le monde: 04:49 PM
Are we concerned with Bayer filters that are in the majority of cameras? What cameras see
through Bayer filters is very different from what we process.
De Pina Colarusso à tout le monde: 04:49 PM
Then state the issues defining "Raw" as it depends on the application and user
De Elnaz Fazeli à tout le monde: 04:50 PM
Core facility staff could also be an audience group
De Michael Nelson à tout le monde: 04:50 PM
I definitely think that many of these issues should be included... maybe in a second paper.
Hopefully we can keep the first paper simple enough that it will have a broadly acceptable
audience.
De peter bajcsy à tout le monde: 04:50 PM
I agree with @michael Nelson
De Arne Seitz à tout le monde: 04:53 PM
I tend to look at it from the detector side. So make a definition for all camera based systems,
At least for the simple parameters that shall be feasible.
De Santosh Podder à tout le monde: 04:53 PM
Lets keep it simple. Agree with Michel. The word "Raw file format or native file format" is
fine here.
De peter bajcsy à tout le monde: 04:55 PM
Could we replace the word "RAW" with "camera/microscope generated"?
De Pina Colarusso à tout le monde: 04:57 PM
Apologies all- I have to attend a meeting now. Many good points to cover here!
De David Grunwald à tout le monde: 05:01 PM

How many of you are also part of WG 2 "Detection systems performance"?

De Ali Gheisari à tout le monde: 05:02 PM

will be back shortly

De Michael Nelson à tout le monde: 05:10 PM

Yeah, I think that image quality is dependent on correctly choosing acquisition settings... but we are only "judging" the resulting image.

"Should not be compared to each other at this time" ?

+1 to move 3 to 1!

De peter bajcsy à tout le monde: 05:11 PM

IQ parameters will form a vector. Thus, each user will have a different weighting of each item in the vector to decide if the image meets the "qualifying" criteria.

De Ulrike Boehm à tout le monde: 05:13 PM

Good point, Peter!

Please do not forget to add your name to the minutes:
https://docs.google.com/document/d/1zRq8l87DcqSm1hjwSAnBlqbKwsF46nrSukM7Xcw0NZM/edit?usp=sharing

De peter bajcsy à tout le monde: 05:15 PM

Given two metadata files with key-value pairs, how is one supposed to calibrate the metadata? Can we clarify what metadata calibration means?

De Elnaz Fazeli à tout le monde: 05:18 PM

Is this part of calibration or quality Group if we take images of the same sample with the same laser power percentage on the same system on different times, but due to the aging laser output power changes and changes the image outcome

De Gaby GM (IGC, 2021) à tout le monde: 05:20 PM

Maybe a "FAIR" index would be useful also ;)

De moi à tout le monde: 05:21 PM

@Gaby : totally agree, maybe more in the hands of WG7 ?

De Michael Nelson à tout le monde: 05:26 PM

I just want to throw out that "IQ Tiers" or "IQ Levels" are going to be problematic from a social sense.. and something we should be careful about.

The press/twitter would probably have a field day.

De David Grunwald à tout le monde: 05:26 PM

+1 Michael, agree

De Rodrigo Bammann à tout le monde: 05:27 PM

+1

De Gaby GM (IGC, 2021) à tout le monde: 05:27 PM

WG5 seems to be focused on PSFs as a measure of instrument performance, not the image itself which is heavily influenced by the sample itself. In WG7 seems to be more focused on defining the "structure & semantics" of metadata. Not sure they are considering a measurable parameter for the FAIRNess of the image itself.

De David Grunwald à tout le monde: 05:27 PM

I have to make lunch for home schooling kids. See you next time.

De Ulrike Boehm à tout le monde: 05:30 PM

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De Caron Jacobs à tout le monde: 05:32 PM

Unfortunately I need to go. See you next time

De Michael Nelson à tout le monde: 05:32 PM
Maybe re-appropriate IDQ for Image Data Quality
still an overlap, but less problematic perhaps
De alex.gramann à tout le monde: 05:32 PM
Thank you! Very informative
De Elton REXHEPAJ à tout le monde: 05:33 PM
thanks