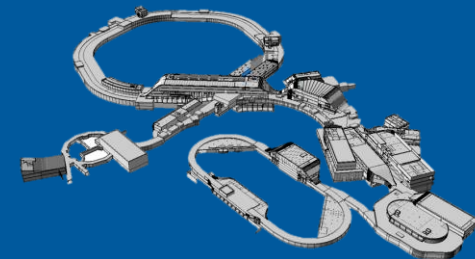


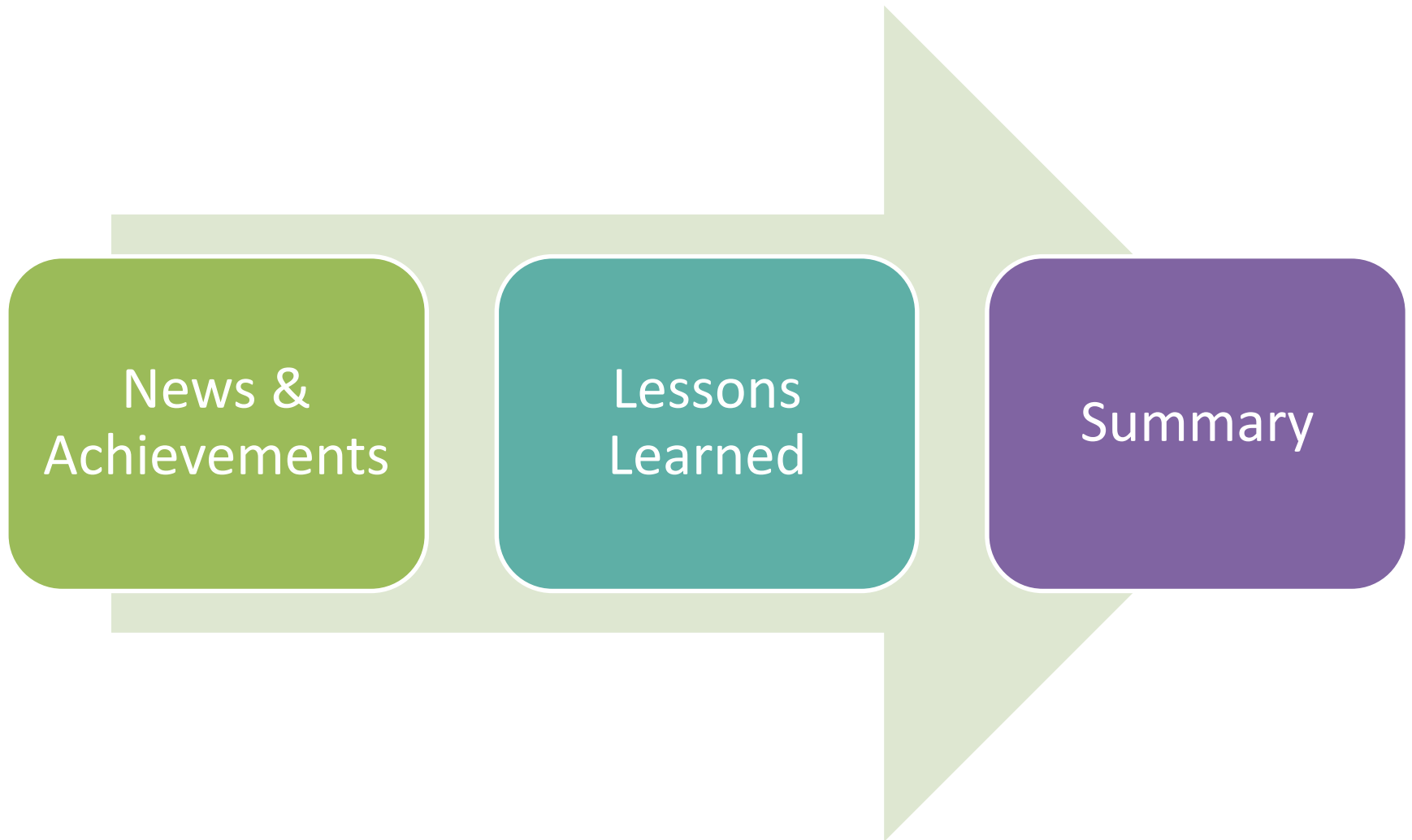
# FAIR Quality Assurance Updates

Presenter: Olga Ritscher

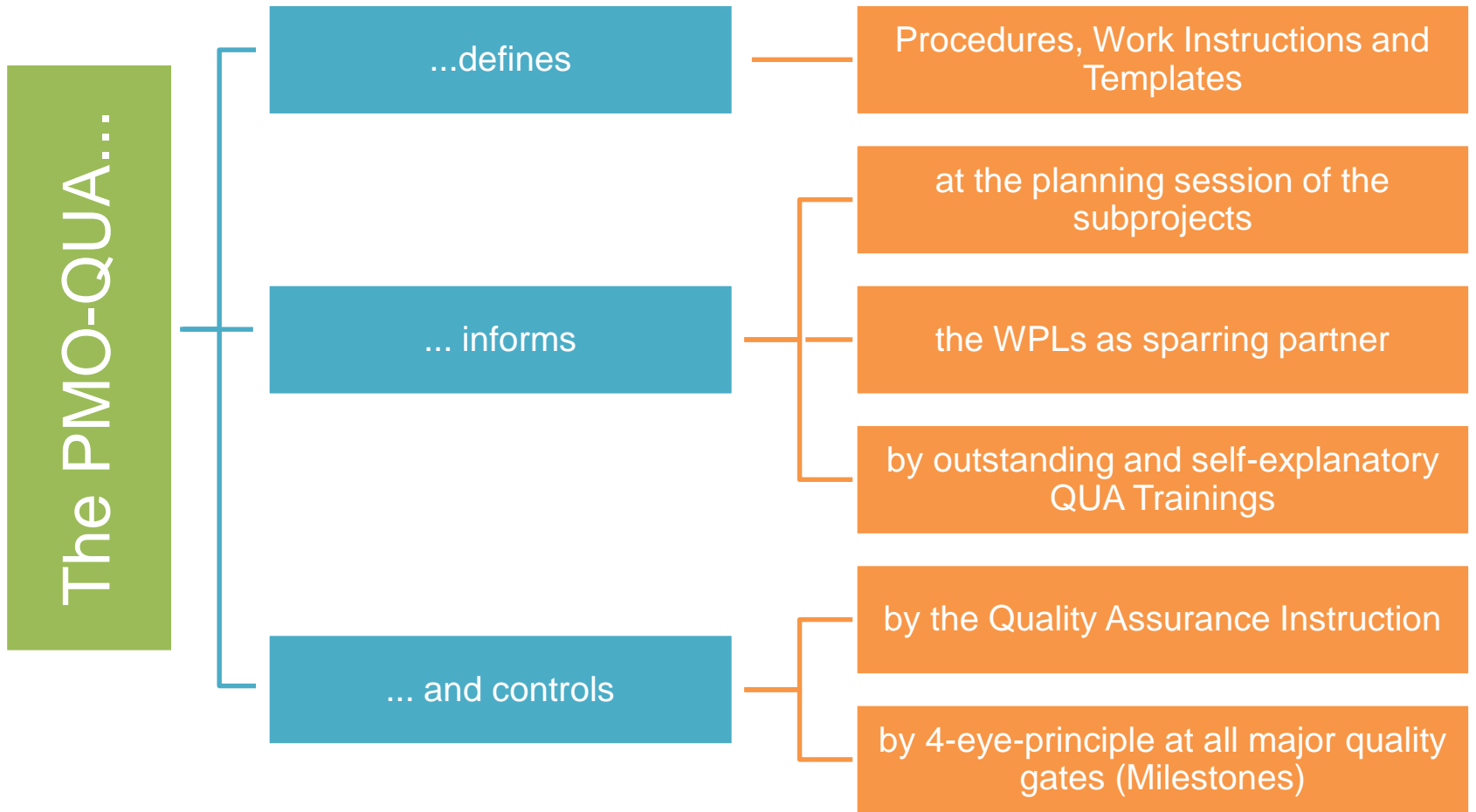


April 26th, 2021

# Agenda



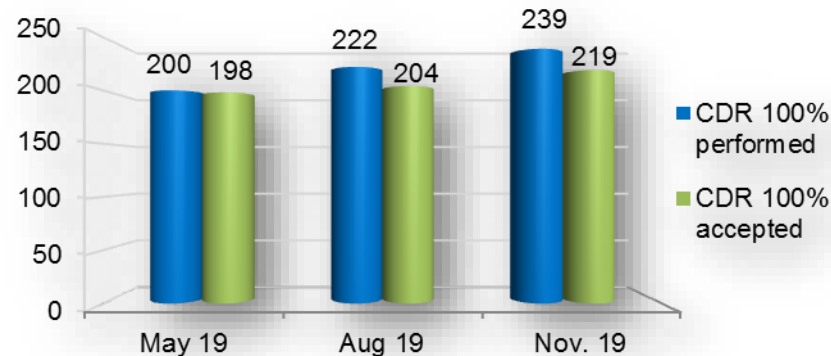
# Introduction: Tasks of FAIR Quality Assurance



Conclusion: Aim of Quality Assurance is to save time and costs

# Introduction: 4-Eye-Principle

- The QUA is asked to confirm all milestones (e.g. CDR, FDR, FAT, SATs)



- If the project status is set to 100%, please indicate within the field “Notes” within MSPProject the link to the acceptance record (or to the applicable documents, e.g. for released Specifications)



➤ This saves all project members a lot of time in search and reduces queries massively

# News & Achievements: PMO QUA BINP-FAIR monthly meeting

- Some recommendations for process improve: quality objectives, general attributes of the whole document, staff training at BINP
- Check list “Control of documentation” to CDR and FDR
- Discussions on process optimization

## Objectives in the field of Quality

The main processes:	Quality objectives	Plans for implementing objectives
Scientific research	Provide the required number of «points» for the institute, calculated by the ministry on the basis of publications	1) Increase the number of publications in scientific journals of the first quartile 2) Carry out explanatory work on the procedure for adding organizations affiliated with the staff of the institute and co-authors from other organizations
Scientific research	Ensure the employment of new engineering & technical specialists (at least 10 people per year)	1) Maintain educational environment for training of highly qualified engineering personnel (undergraduates) for the institute's departments and offering a job for young university graduates (according to BINP training program) 2) Involvement of young researchers in student education process in the

Source: BINP

## Control of documentation

Check list for FAIR/GSI documentation for the milestones M6, M7 (CDR, FDR)

- Set of documents for the milestones M6, M7 (CDR, FDR)
- General identifiers of the component (CID, AID, PSP) in accordance with the PLM-table
- General attributes of the first page
  - Title of the document in accordance with the nomenclature
  - Version of the document in accordance with the Document history
  - Document history
  - Header/Footer for logotype, CC number, title, version, date, pages
- General attributes of the whole document
  - Content
  - Numbering of pages
  - Numbering of pictures, tables, etc
  - Names of pictures, tables, etc
  - Cyrillic letters
- Compliance with Detailed Specification (DS)
  - General identifiers of the component
  - Name of the component
  - Quantity of the component in accordance with the Collaboration Contract (CC)
  - Main parameters
- Required EU Directives
- Quality plan (in cooperation with WPL)
- Risk assessment (in cooperation with WPL)
- Remarks specified in EDMS/letters during CDR/FDR reviewing process
- English spelling, translation
- Return to WPL for revision
- Uploading to EDMS after final approval from BINP QA

Source: BINP

# News & Achievements: QUA Training

- QUA Online training was carried out end of 2021 – 72 Participants
- New Quick Guides: <https://edms.cern.ch/document/2338877>

Managing Acceptance Records within EDMS

Managing NCRs within EDMS

**FAIR GSI** Onepager: Release of an Acceptance Record within EDMS

The scope of this document is to provide a quick description of the process for uploading and releasing an Acceptance Record (<https://edms.cern.ch/document/1458121>) in EDMS. This document is based on "Documentation for the FAIR Project in EDMS - Information Work Package Leaders" (<https://edms.cern.ch/document/1885448/1>) and for information only. In doubt the released procedure is binding.

In general, the steps to be done by the **work package leader** and the **reviewer(s)** are:

Steps to be done	Reference to original document	Quick Guide
1 Fill in an Acceptance Record		
2 Search document container	see page 44	
3 Upload file into EDMS		
4 Change the status from "In Work" via "Engineering Check" to "Under Approval", Start the reviewing process, Invite Reviewers	see page 45ff	
5 Give comments as a formal acceptance or rejection of the	see page 49ff	
6 Stop reviewing process Change status	see page 51ff	
7 If applicable (hand signature): Upload file into EDMS Change status to "Released" or "Approval Rejected"		

*Note: Minutes / Reports must be already stored and "released" in EDMS for the approval of the Acceptance Record.*

Designation of document: F-DO-QUA-en-Onepager\_Acceptance\_Record-V001 Printout is not subject to document control

**FAIR GSI** Onepager: Managing Nonconformity Reports

The scope of this document is to provide a quick description of the process for uploading an NCR (<https://edms.cern.ch/document/1503137>) in EDMS. This document is based on "How to file an NCR in EDMS" (<https://edms.cern.ch/document/1841273/1>) and for information only. In doubt the released procedure is binding.

In general, the steps to be done by the **work package leader** and the **reviewer(s)** are:

Steps to be done	Reference to original document	Quick Guide
1 Search document container	see page 4	
2 Create subdocument for planned measures ("Notification")	see page 8	
3 Upload planned measures ("Measures")	see page 10	
4 Change status from "In Work" to "Engineering Check", Invite reviewers to check and comment the document	see page 15	
5 Review process	see page 23	
6 Based on results of reviewing process change status to "Released" or "Approval Rejected"	see page 26	
7 Upload documentation of executed measures, repeat (4), (5) and (6)	see page 30	
8 If necessary: Clone document, repeat process above	see page 50	

*Note: A new NCR-container has to be arranged for every cloned NCR.*

Designation of document: F-DO-QUA-en-Onepager\_NCR-V001 Printout is not subject to document control

# News & Achievements: New Template for Kick-off Meeting

- New template for Kick-off Meeting  
<https://edms.cern.ch/document/2419626>
- The milestone will be accepted through approval and release of the meeting minutes

## Agenda



- Motivation
- Project Team
- Cooperation & Communication
- Status Quo & Time Schedule
- Quality Plan
- Technical Discussion
- Next Steps

FAIR GmbH | GSI GmbH



# News & Achievements: Updated documents

- Procedure for pre-assembly <https://edms.cern.ch/document/2217753>
- Template for nonconformities <https://edms.cern.ch/document/1503137/6>
- The General Specification <https://edms.cern.ch/document/1365092/3>

## F-VA-QUA-en-0038 „Pre-Assembly Process“

## F-FO-QUA-bl-0003\_NCR-V005

## F-GS-PMO-en-General\_Specification

<b>FAIR</b> GSI	Document type: <b>Procedure</b>	Date: 28.08.2019 Page 7 of 8
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**5 Process Flowchart**

N	Input/ Output	Process Diagram	R	A	C	I
1	Is Accepted List A of individual components Is Defined pre-assembly system and responsibilities	Define Pre-Assembly System	SO	LM	SO	PM
2	Is Roles and responsibilities Is Component ID and OMS structure	Create structure	SO	LM	SO	PM
3	Is Component ID and OMS structure Is Pre-assembly activities description	Describe Pre-Assembly Activities	SO	LM	SO	PM
4	Is Pre-assembly activities description Is Defined resource	Define Resource	SO	LM	SO	PM
5	Is Defined activities and resources Is Internal or External Contract	Assign Assembly Order	SO	LM	SO	PM
6	Is Assigned Contract Is Reviewed documents e.g. Bill of Materials, user manual, instructions, etc.	Pre-assembly Design Review	SO	LM	SO	PM
7	Is Release of Documents Is System pre-assembled	Execute Pre-assembly	Contractor Company	SO	LM	SO
8	Is System pre-assembled Is Acceptance or Receipt (MLO-PS)	Pre-assembly Acceptance Tests	SO	LM	SO	PM
9	Is Pre-assembly system and acceptance report (MLO-PS) performed fact data (F requires)	Functional Test?	SO	LM	SO	PM
10	Is Pre-assembly system Is Test results internal manager final installation place	Storage / Installation	SO	LM	SO	PM

Designation of document: F-VA-QUA-en-0038\_Pre-Assembly-V001.docx  
This printout is an uncontrolled copy. Template: F-FO-QUA-bl-0003\_Template\_VA-V004.docx

<b>FAIR</b> GSI	<b>NCR</b> Nonconformity Report	Page/Seite 1/2
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**1 Application / Beschreibung**

Applicant & Department / Antragsteller & Abteilung: \_\_\_\_\_

QA (responsible employee / zuständiger MA): \_\_\_\_\_

FAIR GSI S/NL: \_\_\_\_\_

**Component / Komponente**

AID: \_\_\_\_\_ CID: \_\_\_\_\_ PSP: \_\_\_\_\_

Designation / Beschreibung: \_\_\_\_\_

**2 Description of nonconformity / Beschreibung der Abweichung**

If necessary, attach sketches, photos or drawings for a better understanding / falls notwendig zum besseren Verständnis, Skizzen/Fotos oder Zeichnungen anhängen

**Cause of failure / Fehlersache:**  
Design Problem DP / Production Problem PP / Technical Deviation TD / Technology Problem TP / Transport Injury TI

Details / Einzelheiten: \_\_\_\_\_

**Classification of deviation / Klassifizierung der Abweichung:**  Minor  Major

**Classification in coordination with FAIR GSI WPL / Einordnung in Abweichung mit FAIR GSI WPL:**

**3 Measure / Maßnahmen**

Leave / Belassen (Reason / Begründung): \_\_\_\_\_

Repair / Reparatur (Description / Beschreibung): \_\_\_\_\_

**Test / Prüfung (Description / Beschreibung):** \_\_\_\_\_

Final of application process for a "minor deviation" / Ende des Beschleunigungsprozesses für eine "kleine Abweichung" in: F-VA-QUA-en-0038. Released by / Freigegeben durch FAIR GSI WPL

Completion of NCR / Abschluss des NCR: **7**

Designation of document: F-FO-QUA-bl-0003\_NCR-V005.docx  
This printout is an uncontrolled copy. Template: F-FO-QUA-bl-0003\_NCR-V005

<b>FAIR</b> GSI	Document type: <b>General Specification</b>	Date: 2020-09-09 Page 1 of 22
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Title: General Specification for the FAIR Accelerator Facility Project

Purpose: Common rules and definitions

Organizational unit: FAIR PMO – Project Management Office

Valid for: FAIR Accelerator Facility Project

EDMS Id: 1365092

**Document History:**

Version	Created	Approved	Comment
V1.0	2014-02-05		Final joint General Spec. of FAIR & GSI
V1.1	2014-02-14	2014-02-27	Limited non-based adjustment of the cover sheet and contents
V1.2	2014-03-13	2014-03-13	Insert EDMS Id and minor corrections
V002	2020-07-29	See EDMS	General update and improvements, e.g. - Movement of TOs to Detailed Specification Samples - New document number - New Preface - Streamlining with contractual issues - Updated Activity Codes
V003	2020-09-09	See EDMS	Updates according EDMS review remarks for V002 - Chapter 5.3.4.5 (within V002) deleted - Chapter 6.1.1: Safety Instructions in German language added - Chapter 8.1.1.3, (within V002) deleted

Designation of document: F-GS-PMO-en-General\_Specification-V003.docx  
This printout is an uncontrolled copy.



# News & Achievements: Digital Acceptance Record

- Release without physical signatures possible (as requested)  
*F-FO-QUA-bl-0002\_Template\_Acceptance\_Record-V005.pdf*

The image shows a digital form titled "Acceptance Record Abnahmeprotokoll" with the FAIR GSI logo. It includes a date field, page number, and several input sections:

- Mark milestone:** Checkboxes for CDR M6, FDR M7, PRE-SERIES M8, FAT M9, SAT M10, PRE-ASSEMBLY M10-P, INSTALLATION M102, and SAT Ba M11.
- Identify the component(s) concerned:** Fields for Component/System, AID, CID, PSP-Code, Manufacturer/Supplier, and Order number.
- Reference all applicable documents:** A section for listing documents like meeting minutes or design records.
- In the case of SAT Aa:** Fields for transport damage, transport sensors, and packaging.
- Remarks:** A large text area for conditional acceptance or rejection notes.
- Overall result:** Radio buttons for Accepted, Conditionally accepted, and Rejected, with a date field for conditional acceptance.
- Significant auditors:** A table with columns for Function of auditor and Name of auditor.
- Save document:** A prominent blue button.
- Footer:** Designation of document and a note that the printout is not subject to document control.

- PDF template can be filled in digitally
  - No printing, no running for signatures, no scanning
  - Bilingual, short explanation on form
- Covers all milestones
  - No longer different protocol for SAT Aa
- Release by EDMS approval

If preferred the physical signature is still possible  
*(but not recommended)*

<https://edms.cern.ch/document/1458121>

# News & Achievements: QUA Intranet becomes Extranet

## Information page of Quality Assurance

This page is the entry point of QUA and offers a collection of information.

Quick access: [www.gsi.de/qua](http://www.gsi.de/qua) → Information page of Quality Assurance

Employees

Team values of QUA

QUA Glossary

QUA Training Modules

Procedures and Templates

Management of Test Equipment

Directives and Standards

QUA Instruction with Components

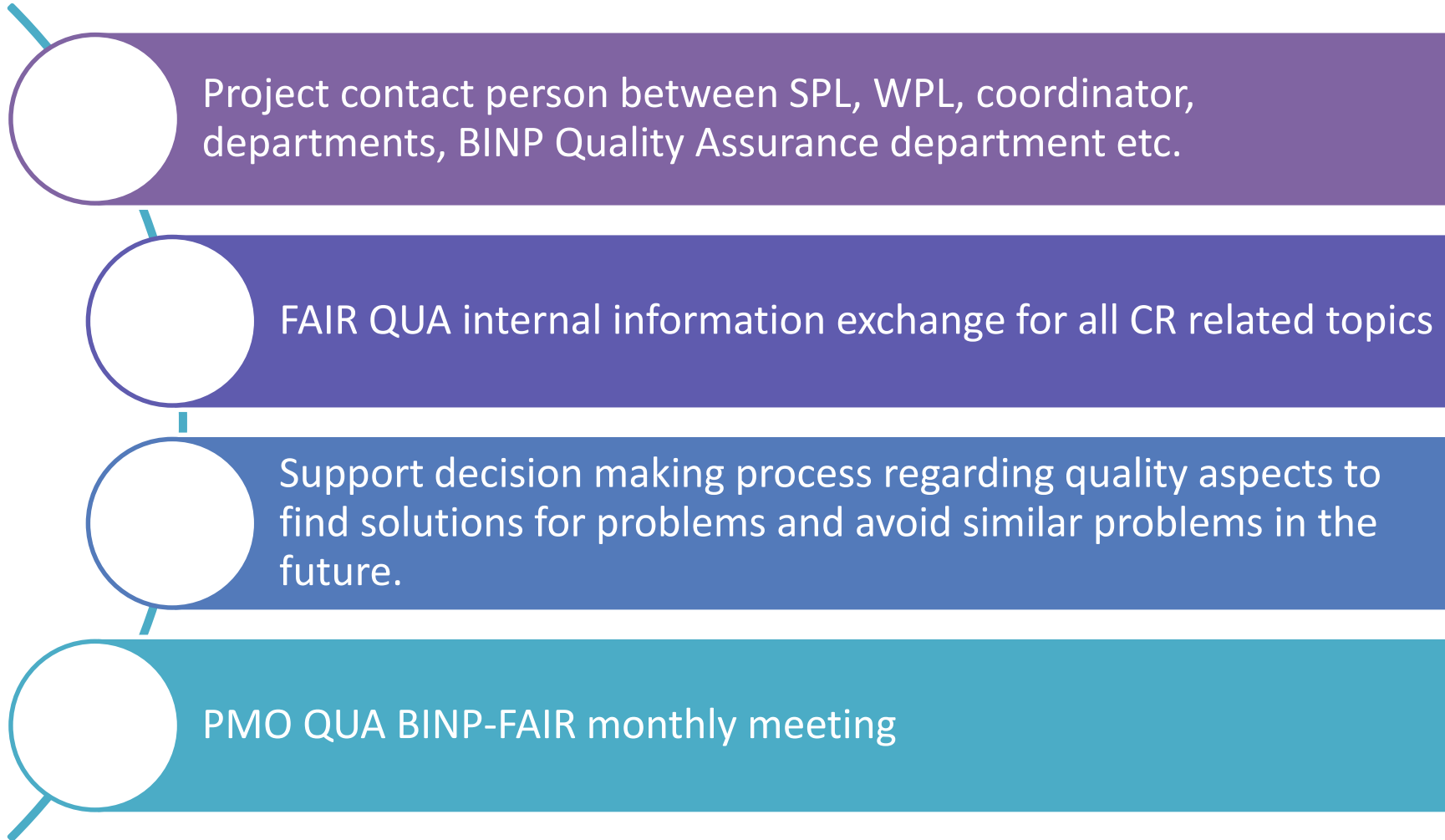
## Procedures, Templates and Quick Guides

Particularly relevant for milestone	Document designation	Description	Link to EDMS
	<a href="#">Procedures (VA)</a>		
M3, M4	F-VA-QUA-en-0003	Control of documented information	<a href="http://edms.cern.ch/document/12">edms.cern.ch/document/12</a>
M6, M7	F-VA-QUA-en-0006	Design Reviews	<a href="http://edms.cern.ch/document/15">edms.cern.ch/document/15</a>
M10, M11, M12	F-VA-QUA-en-0022	Management of Test Equipment	<a href="http://edms.cern.ch/document/17">edms.cern.ch/document/17</a>
M9, M10, M11, M12	F-VA-QUA-en-0025	FAT or SAT	<a href="http://edms.cern.ch/document/15">edms.cern.ch/document/15</a>
all Milestones	F-VA-QUA-en-0030	Dealing with Non-Conformities	<a href="http://edms.cern.ch/document/15">edms.cern.ch/document/15</a>
M8, M9, M10, M11, M12	F-VA-QUA-en-0031	Capability of Measuring Equipment	<a href="http://edms.cern.ch/document/18">edms.cern.ch/document/18</a>
M10-P	F-VA-QUA-en-0038	Pre-assembly of Components	<a href="http://edms.cern.ch/document/22">edms.cern.ch/document/22</a>

# News & Achievements: Updates in the QUA FAIR team for CR project

Name / Email	WPL / SPL	Work Package
Herbert Schwarz until 31.05.2021 H.Schwarz@gsi.de		
Ron Mändl R.Maendl@gsi.de	A. Starostenko	CR Magnets
Strahinja Lucic S.Lucic@gsi.de	A. Krasnov	Vacuum
Florian Gressier F.Gressier@gsi.de	Dr. Christina Dimopoulou	Stochastic Cooling
	S. Kolmogorov	Power Converters
	Dr. Ulrich Laier	RF-Systems
	P. Shatunov	Injection/Extraction
David Freire D.Freire@gsi.de	Thorsten Ziglasch	Special Installations
Focal Point - Olga Ritscher O.Ritscher@gsi.de	Y. Rogovsky	Beam Instrumentation
	Dr. Oleksandr Chorniy	
	Dimitri Shwartz	System Design, Beam Dynamics
	Ina Schurig	DMU

# News & Achievements: My function in the CR project



# Lessons Learned (1/2)



## Runs well

- Templates for project documentation
  - Uploading documents to the appropriate EDMS containers
  - Norms and standards are taken into account
  - Early planning of the operating manual & declaration of conformity
- 
- The project documents for vacuum and schottky pickup were improved
  - The check list “Control of documentation” for the milestone M6,M7
  - ...and many more!!!

### Control of documentation

Check list for FAIR/GSI documentation for the milestones M6, M7 (CDR, FDR)

1. Set of documents for the milestones M6, M7 (CDR, FDR)
2. General identifiers of the component (CID, AID, PSP) in accordance with the PLM-table
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  - Document history
  - Header/Footer for logotype, CC number, title, version, date, pages
4. General attributes of the whole document
  - Content
  - Numbering of pages
  - Numbering of pictures, tables, etc
  - Names of pictures, tables, etc
  - Cyrillic letters
5. Compliance with Detailed Specification (DS)
  - General identifiers of the component
  - Name of the component
  - Quantity of the component in accordance with the Collaboration Contract (CC)
  - Main parameters
6. Required EU Directives
7. Quality plan (in cooperation with WPL)
8. Risk assessment (in cooperation with WPL)
9. Remarks specified in EDMS/letters during CDR/FDR reviewing process
10. English spelling, translation
11. Return to WPL for revision
12. Uploading to EDMS after final approval from BINP QA

Source: BINP

# Lessons Learned (2/2)



Still some potential for improvement

European standards must be used (where required by law / contract)

Templates for project documentation

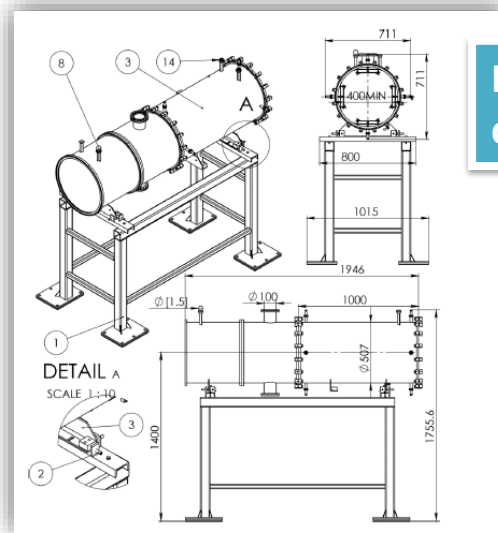
Share with subcontractors and external suppliers

The check list “Control of documentation” for the milestone M6,M7

Implement for all milestones and share with subcontractors and external suppliers



Harmonization of the quality assurance approach across all BINP departments



Documentation is just as important as component!

Responsible  
for quality

Every employee

# Summary

## News & Achievements

- QUA Online training via Zoom in English enabled larger group of participants
- New Quick Guides incl. Screencasts
- New template for Kick-off Meetings
- Updated pre-assembly procedure, template for nonconformities and the General Specification
- Digital Acceptance Record without physical signatures
- Monthly QUA BINP-FAIR meetings enables to discuss and improve some quality aspects, e.g. regarding project documentation

## Lessons Learned

- Many topics work very well and have been improved over the past few years
- Adherence to project milestones is a prerequisite for project success
- Harmonization of quality assurance processes across all BINP departments could be helpful
- Suppliers must be well involved in the quality assurance measures





**Thank you very much!**

**Спасибо большое!**

**Danke schön!**