

## Swiss EPR Projectathon 2017 – Final Report



### Introduction

This document provides summarized information about the Projectathon on the Electronic Patient Record EPR performed in September 2017 (EPR Projectathon). It contains the following sections:

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Further documentation on the event can be found on [www.epd-projectathon.ch](http://www.epd-projectathon.ch) (in German, French and Italian).

## General Overview

### Aims

The aims of the testing at the EPR Projectathon were multiple ones (see also brochure on the EPR Projectathon 2017, available [in German](#) and [in French](#)):

- Identify and gather issues in the basic specifications;
- Identify and gather issues in the test tools and the test plans developed by IHE services;
- Communication about the Swiss EPR to the community through guided tours and media event.

### Participating organizations

A total of 18 organizations participated in the event (16 vendors and 2 *federal institutions*):

- Avintis SA
- BINT GmbH
- *Central Compensation Office (CCO)*
- CISTEC AG
- CompuGroup Medical Schweiz AG
- *Federal Office of Information Technology, Systems and Telecommunication (FOITT)*
- GE Medical Systems (Schweiz) AG
- Health Info Net AG (HIN)
- ITH icoserve technology for healthcare GmbH
- Ofac, Société Coopérative
- Post CH AG
- Sage Schweiz AG
- Swisscom Health AG
- SwissSign AG
- Sylex SARL
- the i-engineers AG
- Uptime Services AG
- VISUS IT Solutions AG

### List of systems

There were 30 systems participating in the EPR Projectathon. A system groups different actors depending of the configuration.

Organization	System keyword	System/Product name	Version
Avintis SA	Secondary System_IHE-Gateway_MPI	Avintis MPI	2.0
Avintis SA	Secondary System_IHE-Gateway	Avintis IHE-Gateway	1.0
BINT GmbH	Core Community Component_BINT_BM5AD	BINTmed AD	5.1
BINT GmbH	Healthcare Professional Portal_BINT_BMHPP	BINTmed5 Adapter	5.1
Bundesamt für Informatik und Telekommunikation	Government Service_BIT_ZAD	EPR ZAD	0.5
CISTEC AG	Healthcare Professional Portal_CISTEC_KISIM	KISIM	
CompuGroup Medical Schweiz AG	Healthcare Professional Portal_CGM_PHOENIX	CGM PHOENIX	7.14.x
GE Medical Systems (Schweiz) AG	Healthcare Professional Portal_GE HCD_ZFP	Centricity universal viewer_ZFP	6.0 SP6.0.6
GE Medical Systems (Schweiz) AG	Secondary System_GE HCD_CCA	Centricity clinical archive	6.0 SP 16
Health Info Net AG	Identity Provider_HIN	IdP	3.0
ITH icoserve technology for healthcare GmbH	Community_ITH-ICOSERVE_2017	eHealth Solutions	VA35
Ofac Group	Healthcare Professional Portal_Ofac_HPP	Ofac Client	5.1
Ofac Group	Core Community Component_Ofac_OAD	Ofac AD	5.1

Post CH AG	Healthcare Professional Portal_Post	HPP	4.0
Post CH AG	Identity Provider_Post_0	IAM	4.0
Post CH AG	Core Community Component_Post	CCC	4.0
Post CH AG	Patient Portal_Post	PP	4.0
Post CH AG	Core Community Component_Post_0	AuthZ	4.0
Post CH AG	Core Community Component_Post_1	HPD	4.0
Sage Schweiz AG	Healthcare Professional Portal_Software	Sage 200 Extra	V-2015.5
Swisscom Health AG	Patient Portal_SCHAG_EVITA	EVITA	
Swisscom Health AG	Core Community Component_SCHAG_HEALTH_CONNECT	HEALTH CONNECT	
Swisscom Health AG	Healthcare Professional Portal_SCHAG_HPPORTAL	HEALTHCARE PROFESSIONAL PORTAL	
SwissSign AG	Identity Provider_Trusted Identity	SwissID	1.0
Sylex SARL	Core Community Component_SYLEX_XDS	SylexXDS	1.0
the i-engineers AG	Community_TIE_0	health engine	9
Uptime Services AG	XDSb_REG_ARTS_4_1_3	ARTS	4.1.3
VISUS IT Solutions AG	Healthcare Professional Portal_VISUS	JiveX Healthcare Portal	5.1
VISUS IT Solutions AG	Secondary System_VISUS	JiveX IHE Platform	5.1
ZAS	Government Service_EPR-ID provider	EPR Provider	XXXX

**Table 1: List of participating systems**



## Test Organisation

**Monitors:** A team of thirteen monitors was set up and trained to assist testers and verify the tests cases. The monitors owned expertise on EPR specifications, and most of them had served before at one or more IHE European Connectathons. This means, they were already familiar with most of the tooling and the process in place.

The team was recruited, managed and led by Tony Schaller, IHE Suisse Technical Project Manager.



**Testing event organization:** Testing was organized face to face within the Campus Liebefeld facilities in Bern. The test platform <https://ehealthsuisse.ihe-europe.net> was installed on site during the event. The event started on Monday September 25<sup>th</sup> at 8 am, and finished on Friday September 29<sup>th</sup> at 11:45.

**Testing event participants:** 79 people participated in the event. Each vendor had two to eleven people present at the EPR Projectathon.

**Tools:** The tests were driven and reported by using the IHE Gazelle Test Management Tool (<https://ehealthsuisse.ihe-europe.net/gazelle>). All the tools used during the event were grouped in the same Virtual Machine under the URL: <https://ehealthsuisse.ihe-europe.net>.

**Virtual Machine:** The virtual machine residing in the cloud was brought on site in order to secure the testing and prevent the risk of a loss of internet connectivity. On site, the network was organized and managed by a subcontractor of eHealth Suisse (Cofex).

On Sunday, preceding the event, the machine in the cloud was stopped, transferred to the server in the Ministry building and started. DNS configuration was changed so that the users could still access the machine as it was in the cloud. At the end of the event, the virtual machine on site was stopped, re-transferred in the cloud and restarted. Both operations could be accomplished each in less than an hour.



## Tools on the Machine

Support Tools	Version
<a href="#">Gazelle Test Management</a>	5.7.0-SNAPSHOT
<a href="#">Proxy</a>	4.4.2
<a href="#">Assertion Manager Gui</a>	4.0.3
<a href="#">Demographic Data Server</a>	4.0.10
<a href="#">Sharing Value Set Simulator</a>	2.0.15
Test tools	Version
<a href="#">EVS Client</a>	5.2.10-SNAPSHOT
<a href="#">Gazelle HL7 Validator</a>	3.3.1
<a href="#">Schematron Validator</a>	2.2.1
<a href="#">PatientManager</a>	9.6.0
<a href="#">HPD Simulator</a>	2.0.5
<a href="#">Gazelle Security Suite</a>	5.5.2-SNAPSHOT
<a href="#">XDStarClient</a>	2.0.12
<a href="#">XDS Testing</a>	4.3.4
<a href="#">Assertion Provider Stub</a>	rev #56788

During the EPR Projectathon, the same set of tools and simulators were used to assist testers and monitors in their tasks. The tools and versions are listed in the above table. Tools included test management, simulators and validation tools.

**Test Plan:** The test plan was elaborated based on the set of sequence diagrams developed in the first semester of 2017. The test list that was used during the Projectathon is available here:

<a href="#">ATNA_Audit_Msg_Check</a>
<a href="#">ATNA_Audit_Record_Forwarding</a>
<a href="#">ATNA_Authenticate_Error_Cases</a>
<a href="#">ATNA_Authenticate_with_Tool</a>
<a href="#">ATNA_Logging</a>
<a href="#">ATNA_Questionnaire</a>
<a href="#">CH-ATNA_Consumer_Query_Retrieve</a>
<a href="#">CH-ATNA_Translate-Audit-Message</a>
<a href="#">Consistent_Time</a>
<a href="#">Creating_an_EPR_for_a_Patient</a>
<a href="#">Delete_EPR_for_a_Patient</a>
<a href="#">HP_Directory_Feed_and_Updates</a>
<a href="#">HP_access_images_Patient_in_RC</a>
<a href="#">HP_access_images_for_Patient</a>
<a href="#">HP_gets_document_Patient_1of3</a>

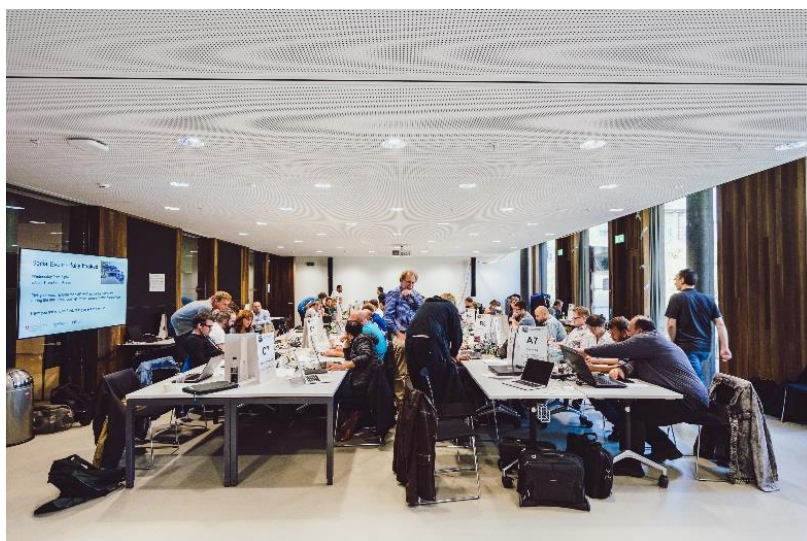
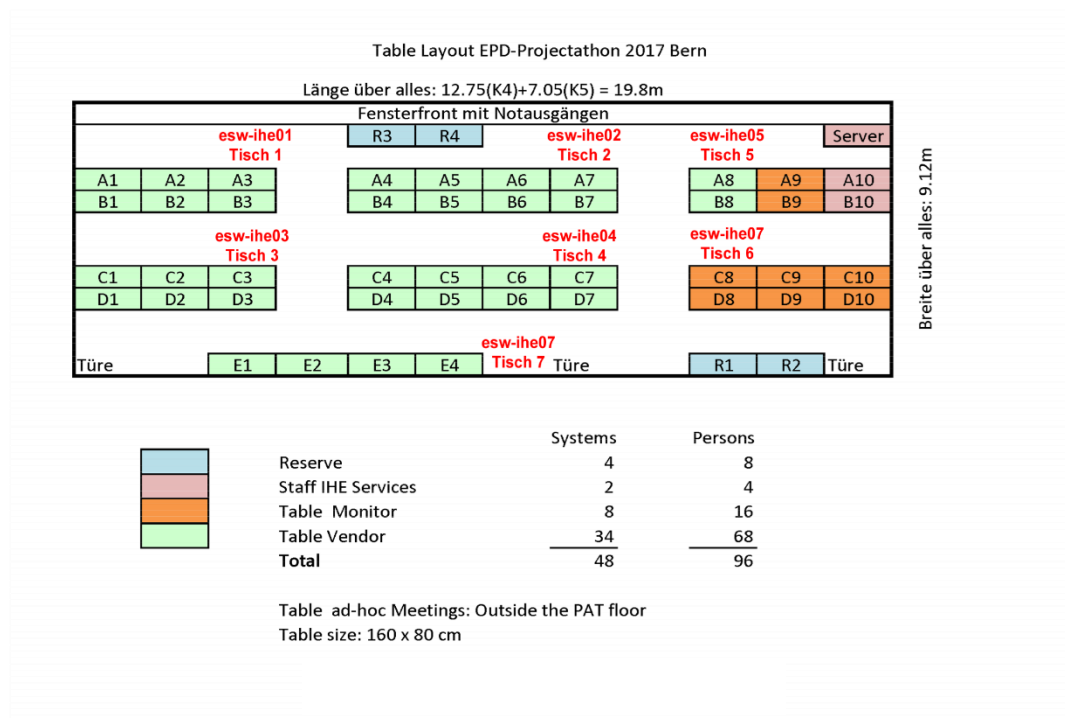
<a href="#">HP_gets_document_Patient_2of3</a>
<a href="#">HP_gets_document_Patient_3of3</a>
<a href="#">HP_provides_document_for_Patient</a>
<a href="#">Inactivate_EPR_of_a_Patient</a>
<a href="#">Opening_an_EPR_for_a_Patient</a>
<a href="#">PIX/PDQ_Load</a>
<a href="#">PIX_Mgr_Configuration</a>
<a href="#">Patient_assigns_access_level_HP</a>
<a href="#">Patient_deletes_document</a>
<a href="#">Patient_gets_document_from_AC</a>
<a href="#">Patient_gets_document_from_RC</a>
<a href="#">Patient_modifies_CC_document</a>
<a href="#">Patient_modifies_Conf_Code</a>
<a href="#">Patient_modifies_writing_pp</a>
<a href="#">Patient_uploads_document_in_RC</a>



<a href="#">Patient verifies audit trail</a>
<a href="#">ProviderInformationDeltaDownload</a>
<a href="#">QP from UPI by Demographics SSN</a>
<a href="#">QueryHealthProviderDirectory</a>
<a href="#">Querying Community Portal Index</a>
<a href="#">Querying Metadata Index Service</a>

<a href="#">XUA Assertion Validation Setup</a>
<a href="#">XUA Authenticate User</a>
<a href="#">XUA Get X-User Assertion</a>
<a href="#">XUA Provide X-User Assertion</a>
<a href="#">XUA X-Service Provider Setup</a>

## Room set up



## Results

### Executed Tests

185 tests were executed during the Projectathon:

- 159 verified
- 23 partially verified
- 3 to be verified

Other tests:

- 27 aborted tests
- 3 paused tests
- 36 running tests

Summing up to a total of 251 test during the Projectathon.

98% of the tests completed by the participants were verified by the monitors during the event (182 out of 185). The results of the tests performed are provided in Appendix A.

### Reported Issues

The outcome of the testing performed during the Projectathon is a set of over 60 Jira reported issues/recommendations:

- 32 issues on specs
- 25 on tools
- 12 on test cases

### Quality Survey Results

A quality survey was performed at the end of the EPR Projectathon. Twelve participants responded to this quality survey. The detailed results can be found in Appendix B, the following is a summary of the survey's results:

**Motivation:** Two third of the responding participants are former participants in an IHE Connectathon and thus familiar with the process. Their motivation to take part at the event was to be able to test their software, to see how far they are compared to the competitors and to learn more about the EPR.

**Overall satisfaction:** Participants were generally satisfied with the registration process and were able to find relevant information in order to decide about participation.

**Satisfaction with communication:** Almost 25% of the response suggest that communication in the preparation phase of the EPR Projectathon could be improved. Among suggestions: timing was too short, and participants wished to have had access to the information earlier. A participant suggested that the systems for the online testing of the Swiss specification (IdP, STS and others) were missing or hard to find prior to the EPR Projectathon. In addition, this participant reported that proper WSDLs and other descriptions for the new actors would have been helpful.

**Satisfaction with Gazelle as a tool:** Participants were in the vast majority satisfied with the gazelle tooling. We have received some remarks that there is a need for improvement for the management of group tests.

**Satisfaction with network response:** The network provider did an excellent job. Everyone was satisfied with the service offered.

**Opinion on monitors and event management:** The participants were satisfied with the monitors. One participant reported that he found it valuable that group tests were organized by the monitors and protocols established on the second day of the Projectathon. There is room for improvement in the management of the EPR Projectathon: better communication, earlier in the process; better organization of the group tests.



**Market readiness:** Only 12% of the tested product are ready to go on the market. This is not a surprise as the testing included newly specified profiles. The good surprise is that a large share are targeting the market in less than 6 months. All responders would like a second EPR Projectathon in 2018.

**General remarks:** Concerning the venue, participants were very satisfied with the food and the social event. They liked the spirit among the participants. Some critical remarks were made about the power supply using diesel, the size of the room that could have been larger, and the communication about Friday being a reserve day. Concerning the testing some disliked the complexity and the lack of good communication concerning the group testing.



## Conclusion

Altogether, the EPR Projectathon 2017 can be considered as **a successful event**:

- The goals as described on page 2 have been reached to a big extent.
- The responsible parties eHealth Suisse, IHE Suisse and FOPH could offer the participants all requested tools and documents for testing although the time schedule had been very tight.
- The participation of the vendor community was higher than originally expected and contributed to the success of the event, bringing a large choice of testing partners to the participants.
- The overall satisfaction with the organisation, communication, IT infrastructure and support of the monitors was high. The participants' feedback showed that they have appreciated the spirit of the event and gained many learnings from it.

There were also **a few challenges** which had to be faced during the event:

- The complexity of testing made it impossible to test the complete set of tests that had been created.
- The time in advance of the event was too short for the participants to be fully prepared for the EPR Projectathon.
- Many vendors had not yet completely implemented the required profiles leading to delays in the testing during the Projectathon.
- IDP testing was restricted to the first days due to the absence of the potential IDP providers the following days. The IDP should have been replaced by a simulator. This is planned for the second EPR Projectathon in 2018.

Hence, the responsible parties take the following **decisions regarding the further steps**:

- The profiles CH:(X)ADR, CH:PPQ and XCMU will be tested in a *Post EPR Projectathon Online Testing* starting from Monday, 20. November 2017.
- There will be another EPR Projectathon in September 2018 to further enhance the interoperability and conformity of the applications with the EPR. It is probable that EPR Projectathons will also be held in the years to follow.
- In contrast to the first EPR Projectathon, these future EPR Projectathons can be prepared in more detail thanks to the lessons learnt and the extended time period ahead of the event, e.g. through: addition of longer and more intensive pre-Projectathon tests and webinars; stepwise increasing of the complexity of the tests at the event itself; in-depth-briefing of the monitors; better documentation of test case validation.
- All vendors are strongly encouraged to further participate in the online testing, to give feedback and to participate in the IHE Connectathon in The Hague, April 2018. The communication via the Google group *epd\_Projectathon* will be continued. People who want to join address themselves to eHealth Suisse.
- The Jira tickets collected at the EPR Projectathon 2017 are processed by the responsible parties eHealth Suisse, IHE Suisse and FOPH or allocated to other parties (e.g. IHE Europe, working group "technic semantic integration").
- The revision of the EPR ordinance (EPRO) which is largely based on the results of the EPR Projectathon will take effect in 2018.





## Appendix A

Outcome of the IHE ITI and RAD profile testing during the EPR Projectathon

Profile	Transaction	Actor	Systems registered	Tests (partially) validated	Number Validations or Req/Resp (Total incl failed)	Comments
<b>IT-Infrastructure and Radiology Technical Framework</b>						
ATNA	Audit Trail and Node Authentication		26	83	286	
CT	Consistent Time		24	24	-	
XDS.b	Cross-Enterprise Document Sharing (-Imaging)		25	-	780	No Peer To Peer tests, used in group test
XCA	Cross-Community Access		5	-	8	No Peer To Peer tests, used in group test
XCPD	Cross-Community Patient Discovery		5	-	10	No Peer To Peer tests, used in group test
XDS-I.b	Cross-Enterprise Document Imaging Sharing		6	-		Not enough test participants for testing
XCA-I	Cross-Community Access Imaging		2	-		Not enough test participants for testing
HPD	Healthcare Provider Directory		9	9	276	
SVS	Sharing Value Sets		6	2	28	
XDM	Cross-Enterprise Document Media Interchange		0	-		No tests
ITI Suppl	XDS Metadata Update	Doc-Administration	4	-		No Peer To Peer tests, used in group test
		DOC_METADATAPDAT	3	-		No Peer To Peer tests, used in group test
ITI Suppl CH XCMU	Cross-Community Metadata Update		2	-		Not enough test participants for testing, Spec published to close to epdpat to implement

## Outcome of the Swiss national extensions

Profile	Transaction	Actor	Systems registered	Tests (partially) validated	Number Validations or Req/Resp (Total incl failed)	Comments
<b>National Extensions</b>						
CH:ATNA	Swiss Requirements on ATNA, XDS.b and CT for Audit Trail Consumption	Audit Record Repository Doc Audit Consumer	3 3	5 5	13	CH:ATNA Change requests discussions during EPDPAT
CH:PDQV3	Swiss Requirements on PDQv3		13	-	74	No Peer To Peer tests, used in group test
CH:PIXV3	Swiss Requirements on PIXv3		13	-	360	No Peer To Peer tests, used in group test
CH:PIDD	Swiss Requirements on HPD for Replication		9	1	10	
CH:XCPD	Swiss Requirements on XCPD for Cross-Community Patient Discovery		5	-	10	No Peer To Peer tests available, used in group test
CH:XUA	Swiss Requirements on XUA for XDS, ADR and PPQ		27	20	187	Difficulty implementing with IdP, no strict IdP specification which allows a Simulator, Spec issues Assertion Provider, no other Assertion Provider except IHE Services

## Outcome of the Swiss national profiles

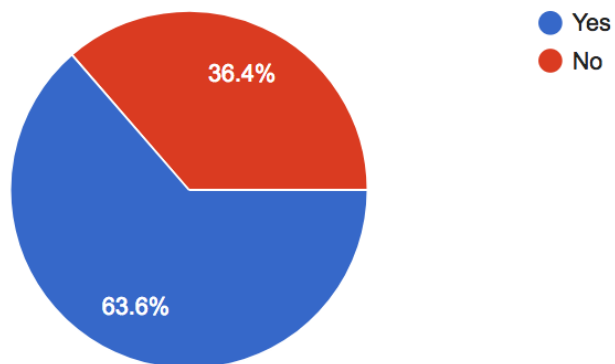
Profile	Transaction	Actor	Systems registered	Tests (partially) validated	Number Validations or Req/Resp (Total incl failed)	Comments
<b>National Integration Profiles</b>						
CH:(X)ADR	Authorization Decision Request	Authorization Devision Pr Authorization Decision Cc	2	0	166	Vendors worked on ADR during projectathon, but could not complete the group test in that case (independent on ADR)
CH:PPQ	Privacy Policy Query		2	0	155	
CH:CPI	Swiss Requirements on HPD for Community Portal Index		0	-	51	Spec published to close to epdpat to implement
<b>Unique Person Identification Service</b>						
UPI	Unique Person Identification Service		8	11		
<b>Group Testing involving all profiles</b>						
EPR_META				33		Group Tests performed involving all actors except Imaging, (X-)ADR, PPQ, CPI, XCMU, Metadata Update
						6 of 18 group tests could be (partially) verified, see Testsummary on tab left

## Appendix B

Detailed answers on the quality survey results

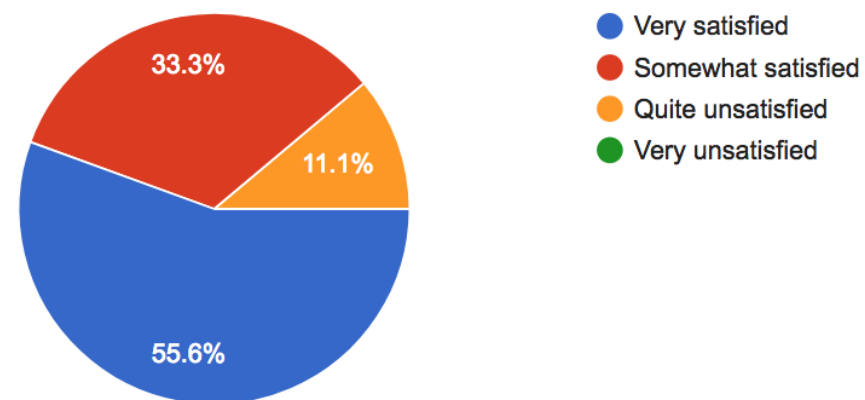
Have you ever participated to one of the European or North American IHE Connectathon

11 responses



How can you describe your satisfaction regarding the registration process ?

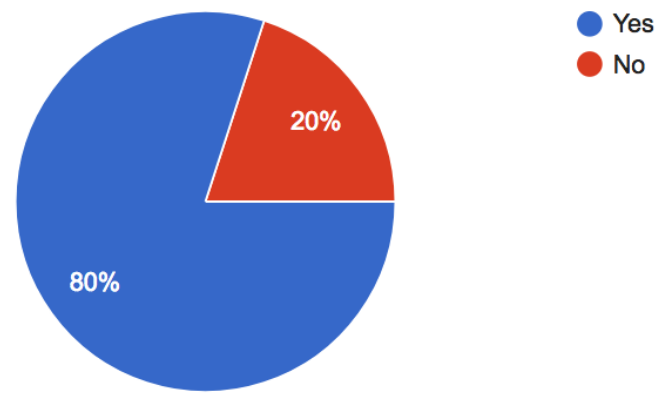
9 responses





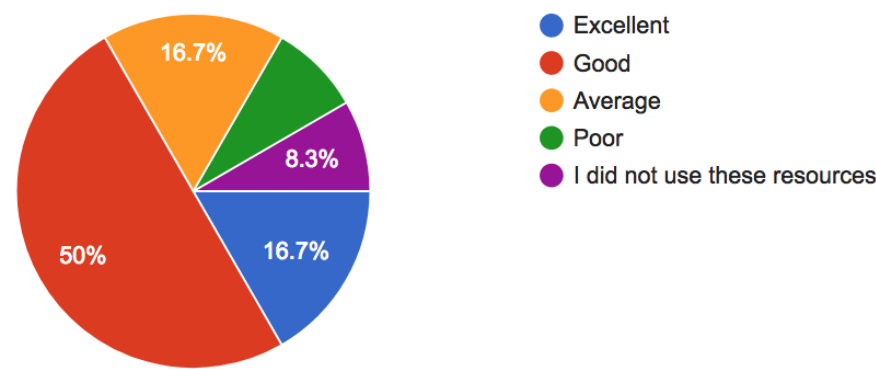
Could you easily find all information you needed on the website and the documentation to make your mind ?

10 responses



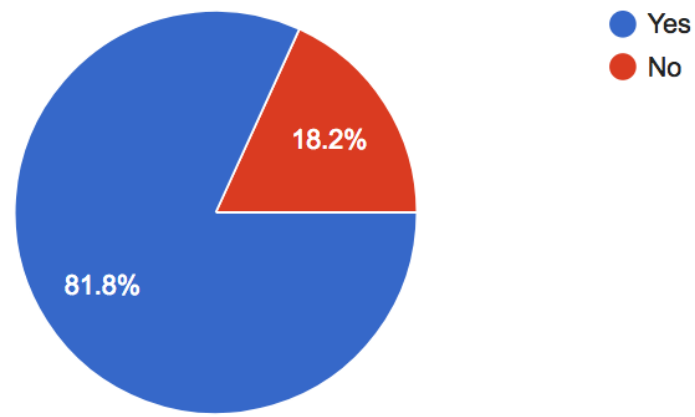
Please rate your satisfaction with the communication, Webinars, and the Technical Support Materials website used from registration till the event to help you prepare for Projectathon testing.

12 responses



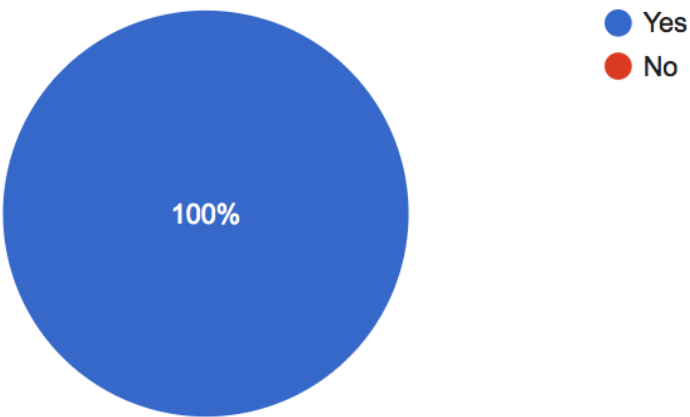
Is the Gazelle tool intuitive enough and easy to use?

11 responses



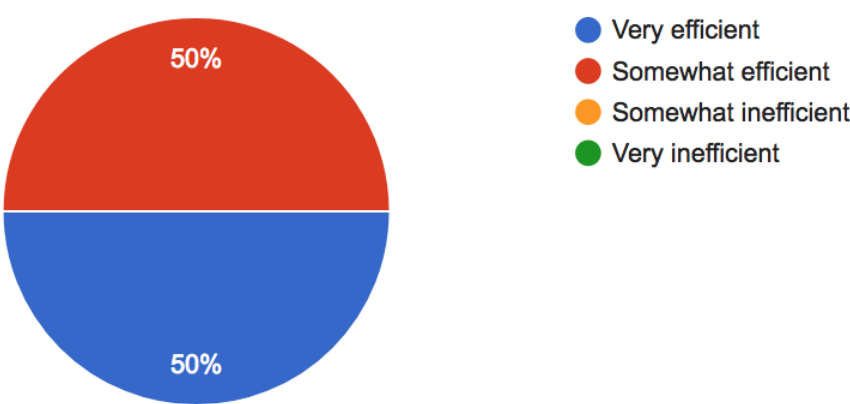
Was the network response time satisfactory enough?

11 responses



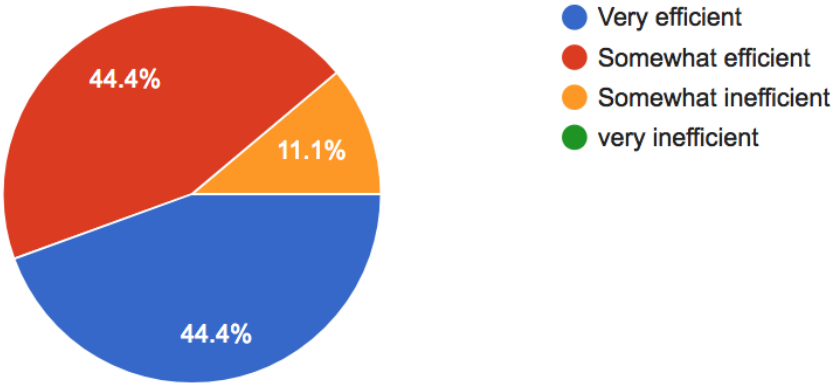
In your experience, did the Projectathon monitors perform their work efficiently?

8 responses



In your experience, was the management of the Projectathon efficient?

9 responses



How far from the market is the system you have tested at the Projectathon ?

8 responses

