



Title	Developers Committee Meeting		Date	16.02.2023
Location	https://meet.jit.si/openIMISDevelopers		Time	08:00 UTC
Meeting called by	openIMIS Initiative	Type of meeting	Weekly Call	
Facilitator	All	Note taker	All	
Distribution list	openimis-developers-committee@googlegroups.com; openimis-implementers-committee@googlegroups.com;			
Chat channel	https://discord.gg/khDgTDWUZV			

#	Item		Discussion	Date
A: Action, C: Confidential, D: Decision, I: Information, W: Warning				
19	AGPL V3 License	W	<ul style="list-style-type: none"> German lawyer sent preliminary report, waiting for DEZA reaction <ul style="list-style-type: none"> DEZA still proposes Bern clause http://www.apache.org/licenses/LICENSE-2.0 needed for the HTTP Client mobile app (Point 4 - Redistribution) new contract with the lawyer is active - DEZA is signalling willingness to adapt 	09.02.2023
59	DHIS2 Integration	I	<ul style="list-style-type: none"> Demo DHIS2: https://dhis2etl.s1.openimis.org Release DHIS2: Dataset could be used instead of program https://openimis.atlassian.net/wiki/spaces/OP/pages/1484423230/Report+queries+for+SSRS+dataset to be checked: Program Dataset Connector (PDAC) ADX file supported started to create aggregation mechanisms for ADX export - SQL scripting on openIMIS side HISP India demo is down - replace with openIMIS sandbox server - data from artificially generated dataset #260 Bluesquares data scripts are ready, will start data upload into HISP India dashboard next week 	16.02.2023
105	List of modules	D	<ul style="list-style-type: none"> JLN: https://openimis.atlassian.net/wiki/spaces/OP/pages/807600219/Background+-+Joint+Learning+Network+for+UHC https://openimis.atlassian.net/wiki/spaces/OP/pages/589561955/openIMIS+Plugins Mapping openIMIS-JLN started: https://openimis.atlassian.net/wiki/spaces/OP/pages/945422345/JLN+Process+-+OpenIMIS+Mapping started restructuring of documentation #306 update of Tomai session needed: https://openimis.atlassian.net/wiki/spaces/OP/pages/3280240641/Webinar+openIMIS+pour+I+Assurance+maladie+L+approche+modulaire+-+15.03.2022 new graphical overview: https://openimis.atlassian.net/wiki/spaces/OP/pages/589561955/openIMIS+Modules Modular Architecture - https://openimis.atlassian.net/wiki/spaces/OP/pages/3376152582/Modular+Architecture+Draft finished, next steps: document modules 	29.09.2022
127	Publish AAB/APK on Gplay	A	<ul style="list-style-type: none"> Policies Demo Mobile App on Google Play TZ policy app will be pushed to Google Play - in testing countrywide From Aug 1 2021, Google Play will require new apps to be in AAB instead of APK. We can upload the signing key to Play 	09.02.2023

			<ul style="list-style-type: none"> Store and let it manage signing of the AAB, so this would make our life easier. point App to server with MS SQL issue on Android 13? 	
135	Modular version Install Nepal	A	<ul style="list-style-type: none"> legacy part is productive - FE not applied for all functions 2 front-ends access: 1 Modular - 1 legacy <ul style="list-style-type: none"> 2 domains will be used in parallel Claim reviewers will be the first to use the modular; if it work well other kind of user will move to Modular Migration needs some adaptations first https://openimis.atlassian.net/wiki/spaces/OP/pages/3460562945/Customize+and+setup+the+modular+version+of+openMIS+for+Health+Insurance+Board+requirements+in+Nepal contract for migration signed workshop 28.2. - 02.03 	16.02.2023
136	AI Project	A	<ul style="list-style-type: none"> openIMIS AI-based Claim Adjudication presentation in an internal ISSA webinar (170 participants) working on random test data items & services work well 	16.02.2023
147	Tanzania implementation	I	<ul style="list-style-type: none"> integration into a accounting systems (muse) ongoing Roll-out of modular version starting with pilot => catalytic funds could be used for migration? new insurance act expected next year which will bring high volumes of new beneficiaries Formal Sector modules to be implemented for small farms -> reach out to DCI Kubernete deployment will be checked First test with full modular installation started Bulk family payment in pipeline => requires GePG integration migration 	16.02.2023
164	Roadmap	I	<ul style="list-style-type: none"> Old roadmap documents need updating e.g. for the new tender processes #167. https://openimis.atlassian.net/wiki/spaces/OP/pages/40763442/Product+Roadmap collecting (big) ideas for next project phase start writing up items for draft 	16.02.2023
176	Video tutorials	I	<ul style="list-style-type: none"> Session 1 - openIMIS Legacy Web Application Session 2 - openIMIS Legacy Web Application Localization New release: Docker installation tutorial - needs to be added to playlist (needs to be public in YT) Update playlists Translations to French language coming up: module configuration 	24.11.2022
183	Nepal new features (modular)	A	<ul style="list-style-type: none"> New features are requested by HIB Puru will submit the new features on Jira (part already on jira) contracting out in Nepal by tomorrow Legacy/Modular will depend on the module available pushed to openIMIS repos - needs review for next release & mission 	16.02.2023
188	Extend to other Schemes (Product redesign) "Beyond Health"	A	<ul style="list-style-type: none"> Develop a common roadmap https://openimis.atlassian.net/wiki/spaces/OP/pages/1817346053 found Jiri report, needs to be uploaded Ideas for architecture: <ul style="list-style-type: none"> https://openimis.atlassian.net/wiki/spaces/OP/pages/3024289830/openMIS+beyond+health+features+needs https://openimis.atlassian.net/wiki/spaces/OP/pages/3463577606/Product+refactoring channel this through Conversion Initiative (DCI) 	26.01.2023

			<ul style="list-style-type: none"> • make this a target for next project phase • discussed in Deep Dive & Bhela 	
190	Insuree self registration (general)	I	<ul style="list-style-type: none"> • new integration to foresee with payment gateway, use case for the payment modules ? • https://dev.s1.openimis.org/api/self_registration/temp_insuree_reg/ ? • Can Nepal devs support on OTP based via email? <ul style="list-style-type: none"> ◦ would be good to have this for 23-04 Release • will be released without testing (no testcases) • new developments in planning 	16.02.2023
193	Client self management Mobile App in Nepal	I	<ul style="list-style-type: none"> • New mobile app for enquiries under development • https://github.com/tinkertechnology/ • Refactor needed to adapt the code to the Main database model (it use Nepal specific fields) • migration to FHIR • https://github.com/openimis/mobile-self_registration_flutter • not in 2022-10 	16.02.2023
204	Students	A	<ul style="list-style-type: none"> • Can we recruit students for a thesis? • Page to be created with possible thesis topics • contacts to Uni Frankfurt established - presentation in February • MARS Lab had to be cancelled due to health issues - will be redone next semester • Presentation held in Frankfurt University yesterday 	16.02.2023
208	Developer Workshop	D	<ul style="list-style-type: none"> • What about a Dev Workshop in January? Rather later in person (Nepal) • Intermediate sessions as needed (Kickoff for new T3 project: 04.01.) • Preferences: Nepal, then Kenya • Can be done with #334 (OpenHIE 2023 Community Meeting)? • General community meeting maybe in June • Option: Cameroon 2023-06-05 to 2023-06-09 (tbc) 	16.02.2023
223	Testing Scenarios	D	<ul style="list-style-type: none"> • https://openimis.atlassian.net/wiki/spaces/OP/pages/3000664081/Test+cases+overview • SolDevelo plugin for test case management: https://www.soldevelo.com/products/jiratestmanagement/ • test cases needed for Nepal contributions (portal etc) • Installation tests to be listed here: https://openimis.atlassian.net/wiki/spaces/OP/pages/3001057322/4.+Installation+test • Example for installation test: https://openimis.atlassian.net/wiki/spaces/OP/pages/3470196759/Test+Install+openIMIS+on+Windows+10+Windows+11+with+Docker+Desktop • new Tender 2 contract started - will work on testcases 	08.12.2022
230	Security auditing	D	<ul style="list-style-type: none"> • Digital Square received the security review and recommendation • new project: https://openimis.atlassian.net/wiki/spaces/OP/pages/3365076993/Project+Security+2022 • only one high risk in release found - fixed • need wiki page on security activities • Digital Square hired a security expert - will set up call • Django 3.2 security advisory. It's "only" a denial of service possibility in file uploads. Let's make sure to update for the release. 	16.02.2023
239	GovStack	A	<ul style="list-style-type: none"> • openIMIS Integration: https://docs.google.com/presentation/d/1Izh5FQlqgmVkk7KU0ui8ETVaFawfsT-DFO8Zql6G-mU/edit#slide=id.p1 • Demo: 	16.02.2023

			<ul style="list-style-type: none"> ○ video ○ instance ● GovStack moving all documentation to confluence: https://govstack-global.atlassian.net/wiki/spaces/GH/overview ● Meeting with new GovStack Sandbox implementers last week, they will look at openIMIS details ● regular call with openIMIS developers re-activated ● deep dive today (again) with gofer 	
246	International Developers	A	<ul style="list-style-type: none"> ● How do we make the community compatible with other language groups at all levels? ● French channel in discord? ● Workshop organised by Digital Square ● call with Digital Square, they set up a workshop on how to integrate other language communities ● team from DRC has joined ● planning for a developers coffee table session (e.g. once in two weeks/ one per month) - same timeslot as gumzo ● first one after the last gumzo took place - low attendance due late announcement ● #252 	16.02.2023
249	Random Claim Sampling	I	<ul style="list-style-type: none"> ● HIB has requested support on Claim Random Sampling. ● upload to github done, needs to be merged in legacy ● need to be migrated to modular - difficult for HIB 	17.11.2022
250	Performance test (Modular) on big data set	A	<ul style="list-style-type: none"> ● https://s2.openimis.org/front/home ● can it be further anonymized for use as demo data set ● needs to be extended to the PostgreSQL version ● migration script from existing MSSQL DB ● automatically create data set - functionality already in openIMIS - script from BISq will be made available ● STPH released a script to development - doku needed 	16.02.2023
252	Toumai Community		<ul style="list-style-type: none"> ● Upcoming <ul style="list-style-type: none"> ● November 1: Review of openIMIS processes and implementation examples ● November 15: A database of documents and forms used by openIMIS implementers ● group: https://groups.google.com/g/openimis-toumai- ● reviewing applicants for GIZ position 	09.02.2023
260	Documentation management platform	D	<ul style="list-style-type: none"> ● Need to develop an implementer's guiding document on the payment layer ● docs.openimis.org (ReadTheDocs) ● openIMIS Docs ● https://openimis.gitbook.io/installation-and-country-localization/ (GitBook) ● need to standardise & improve module documentation (e.g. which repositories are involved?) ● topic in coordination desk team meeting ● #306 ● make it a priority next semester ● https://openimis.atlassian.net/wiki/spaces/OP/pages/3463315457/2022-11-17+Developers+Deep+Dive+Call 	16.02.2023
274	Default module configuration	A	<ul style="list-style-type: none"> ● Add default configuration to DB for each module so implementers know what can be configured. ● could be done through migration script ● #288 Implementer documentation 	09.06.2022
284	offline mode (web)	I	<ul style="list-style-type: none"> ● current version of extracting data for offline mode for web-app is not working ● nobody is using it, improve mobile apps instead ● need to communicate to implementers 	09.02.2023

			<ul style="list-style-type: none"> • Ticket open to test the offline version for the Legacy https://openimis.atlassian.net/browse/OP-466 • problem with vouchers - validation via USSD? • to check if this can be done via the new mobile solution • # 343 	
286	Mauritania Implementation	I	<ul style="list-style-type: none"> • ePayment implementation through Bankily mobile application in discussion • contract set up with STPH • new enrolment features: <ul style="list-style-type: none"> ○ insuree number automatic generation ○ insuree card generator with personal information, QR code and photo ○ attach attachments to insurees (i.e. passport) 	16.02.2023
288	Implementer documentation	D	<ul style="list-style-type: none"> • Should we add specific documentation for the implementers (not end user or installation) ? • Explain the module configuration in details, start from new structure • through tender 2? • #306 	10.11.2022
295	OpenMRS/BAHMNI FHIR	I	<ul style="list-style-type: none"> • openMRS/BAHMNI FHIR needs to be updated to FHIR4 - workload and funds (Notice F2?)? (FHIR3 still works, though) • Global OpenMRS packages still on FHIR3 - work in progress to migrate • synchronise with Possible Health implementation • FHIR4: there were updates in the BAHMNI packages • FHIR5: #320 • installation scripts from 2019 are difficult and specific the Possible Health Project • FHIR update to FHIR4 in OpenMRS done, but no claims 	16.02.2023
296	Cameroon Voucher Scheme	I	<ul style="list-style-type: none"> • bundle/package of services and items, and voucher number validation features was developed by Y-Note #243 • UCPC MoH • end users training done • Go live target Oct-2022 but quite some customisation pending • final training for pilot ongoing - bug-fixing is done • claim workflow needs to be forked -> flag for migration • running well in pilot 	16.02.2023
301	Split database user	A	<p>Consider splitting database user of the webapp and the more advanced user. Right now, the documentation says to create imisuser with db_creator role. The user also has the right to create backups and restore them. The legacy app allows admins to give a path like c:\openimis\foo and dump a file there. Or load the database from such a path. This is a big risk for security. Even if it is restricted to Admins, combined with another flaw, it might have very bad effects</p>	03.03.2022
304	Django module from ol modules	A	<ul style="list-style-type: none"> • Add django modules from openimis modules • this is not only about loading py modules, it needs to be part of the DJANGO_MODULE in the assembly settings.py 	12.05.2022

306	Documentation QA	A	<ul style="list-style-type: none"> Consistent documentation Tasks: https://openimis.atlassian.net/wiki/spaces/OP/pages/3276505089/Documentation+QA+Activities+2022 Wiki-structure: https://openimis.atlassian.net/wiki/spaces/OP/pages/3290923009/Wiki+Target+Structure+Draft New focus on installation guide https://openimis.atlassian.net/wiki/spaces/OP/pages/3304488961/Documentation+Taskforce documentation platform #260 Harmonizing openIMIS descriptions -> https://openimis.atlassian.net/wiki/spaces/OP/pages/3499032577/openIMIS+Standard+Descriptions+-+Overview List of Wiki maintenance tasks - https://openimis.atlassian.net/wiki/spaces/OP/pages/3481993288/Wiki+Maintenance 	02.02.2023
311	Mobile Offline extracts	A	<ul style="list-style-type: none"> We decided not to include the web offline mode extracts but the Mobile app extracts and imports are necessary (and missing) They are actually included into the April release but not shown in the frontend. There are some issues with the existing system and mobile apps, so Bluesquare is currently testing this and making sure that it's available. Implemented in front and back, with rewrites of stored procedures Missing end-to-end testing on some features data for testing needed from STPH - will be generated through the beta tests 	13.10.2022
312	UI-Wording	D	<ul style="list-style-type: none"> Automated translation done with verification (on all terms extracted) Who decides on wording in user-interfaces for the standard version? address this question to implementers Discuss: Who is responsible? make it part of the UAT 	08.09.2022
321	Compatibility with other DB systems	I	<ul style="list-style-type: none"> Oracle is officially supported in Django openIMIS is most likely not able to take over Support for non-PostgreSQL stored procedures are still a problem different json dialects are handled by Django (indexing problem in MS-SQL reduced, but not efficient) - done DJANGO migration scripts should be used exclusively - create ticket current release: data migration from MS-SQL to PostgreSQL (might need customization) future releases: develop against PostgreSQL, migrate to MS-SQL or others if needed 	16.02.2023
316	The Gambia	A	<ul style="list-style-type: none"> Current status: started demo of OpenClinics GA: https://sourceforge.net/projects/open-clinic/ <ul style="list-style-type: none"> already has a lot of interoperability experience with insurances http://www.globalhealthbarometer.net/globalhealthbarometer/datacenter/datacenterHomePublic.jsp decision for OpenClinics GA demo on CRVS HERA integration - are the APIs openly documented? Based on https://github.com/SecureIdentityAlliance/osia 	02.02.2023

317	Implementation in DRC	A	<ul style="list-style-type: none"> Implementation kick-off server is acquired Production Deployment done user documentation completed mobile app issue solved refreshing trainings in the field 	26.01.2023
320	FHIR R5	A	<ul style="list-style-type: none"> Can this be funded through Digital Square? could be part of an implementation project should wait for the official release could be a student project / estimation of days needed update in claims: field for scheme not mandatory any more 	24.11.2022
325	FHIR R4 to R4B	A	<ul style="list-style-type: none"> Should we upgrade FHIR R4 from 4.0.1 to 4.3.0? Only update of the openMIS API V4, no parallel version should we implement PATCH HTTP method to update only changed fields in resources (PUT is replacing all fields and should validate mandatory fields)? 	08.09.2022
326	Publication to FHIR IG registry	A	<ul style="list-style-type: none"> Publication to FHIR IG registry http://fhir.org/guides/registry/ http://registry.fhir.org 	04.08.2022
327	Digital Square Notice G0	A	<ul style="list-style-type: none"> New application is required (even if already registered) Funds of max 25k for documentation of impact / scale https://docs.google.com/document/d/1WuwjcDRdiG_5kMa2v0Vav10ulha8cB-v2DjJ3Lmy9QM/edit peer review was extended for a handful of products - results expected next month openMIS is going to be included 	16.02.2023
328	Sandbox	I	<ul style="list-style-type: none"> https://openimis.atlassian.net/wiki/spaces/OP/pages/3219128428/Sandbox+Landscape default: postgres, additional option MSSQL on release server MSSQL still required for the mobile App <ul style="list-style-type: none"> Demo -> PSQL Release -> MSSQL + Mobile backend DHIS2 demo needed (just data no ETL) <ul style="list-style-type: none"> where are the resources from the HISP India project - especially data are needed 	09.02.2023
329	openMIS implementation for IDP in cameroon	I	<ul style="list-style-type: none"> https://openimis.atlassian.net/wiki/spaces/OP/pages/3472621589/Project+Customization+Cameroon Insurance scheme like Voucher scheme with scoring system Bonus and penalties curation/filter for potential beneficiaries multi provider mechanism is needed: different providers, same invoicing channel on hold 	26.01.2023
332	PBF link	I	<p>BlueSquare is looking at the link between openMIS and results based finance</p> <ul style="list-style-type: none"> in pilot phase documentation will be shared later -> wikipage Cameroon project PoC not possible because HIV openMIS instance is still Legacy. New contract is signed by STPH to migrate to modular and include this connection 	02.02.2023
334	OpenHIE 2023 Community Meeting	I	<ul style="list-style-type: none"> 1-5 May 2023 Lilongwe, Malawi at the Umodzi Park Hotel https://openimis.atlassian.net/wiki/spaces/OP/pages/189595649/Events 	09.02.2023
335	IHE profiles	A	<ul style="list-style-type: none"> Approach IHE to propose OpenHIE standards as IHE profile board meeting last Tuesday - next milestone in March next activity: look for IHE experts pull in GIZ expert - will join next FISh call 	16.02.2023

337	login case sensitivity		<ul style="list-style-type: none"> • postgres is case sensitive for login names, mssql isn't • We can make it case insensitive but we have to be careful if people create a "admin" user when the actual one is Admin. 	01.12.2022
338	import from flat files		<ul style="list-style-type: none"> • import from excel files for insuree • https://openimis.atlassian.net/wiki/spaces/OP/pages/3466067982/File+importer • BISq (done) <ul style="list-style-type: none"> ◦ add docu on file structure etc • STPH <ul style="list-style-type: none"> ◦ working on insuree import - almost done 	16.02.2023
339	Installation	A	<ul style="list-style-type: none"> • automatic restart for all services • can we move to docker compose 3.8? <ul style="list-style-type: none"> ◦ swarms, secrets ◦ some option are not supported (see warning if 3.X is used) but nothing seems blocking • move to 3.8: yes, but needs review • rework of the docker <ul style="list-style-type: none"> • Move to docker 3 • Use letsencrypt container to renew certificates • remove the IP in the compose (DONE) • *remove openresty: use js for the b64 encryption or "try file" • merge gateway and fe container • move the db Docker to db repo • merge dist_dkr be assembly • Changes need to be tested on standard platforms (windows / linux) and documented in Installation Guide • Implications of having the docker compose versioned in be assembly need to be considered • option for additional cloud init file: https://openimis.atlassian.net/wiki/spaces/OP/pages/3510730757/deploying+with+docker+and+cloud-init 	16.02.2023
340	Mobile app (Niger)	I	<ul style="list-style-type: none"> • Niger encountered a blocking issue with Enrollment app syncing when names had accents • GitHub Action used a default debug certificate. It was cached but lost since => impossible to update the apps in place • We did some ADB sorcery to get out of trouble • Going to commit a key/signing system to GitHub for better future releases. 	15.12.2022
341	Impact Evaluation NP	I	<ul style="list-style-type: none"> • STPH gained funds from WHO to do impact evaluation in Nepal • preparation has started , results by end of April • consultant is identified & contracted 	09.02.2023
342	BI Architecture	I	<ul style="list-style-type: none"> • Integrate elastic search or as part of an attached FHIR server <ul style="list-style-type: none"> ◦ indexation issue ◦ rebuild time ◦ needs a lot of Ram (in memory approach) • Metabase ? issue with weird OI db structure • plan deep dive on Soldevlo ADX solution • https://github.com/openimis/openimis-be-dhis2_etl_py/blob/chad-indicator/dhis2_etl/services/adx-indicator.py#L362 	16.02.2023
343	FHIR offline mode		<ul style="list-style-type: none"> • FHIR has a solution for offline systems • https://openimis.atlassian.net/wiki/spaces/OP/pages/3175874561/Offline+usages#Technical-approach 	19.01.2023
346	Wiki Editor	I	<ul style="list-style-type: none"> • There was a major migration of wiki pages that were still in the old editor mode. Please check the migrated version outdated pages https://openimis.atlassian.net/wiki/spaces/OP/pages/3454894083/Wiki+outdated+content 	09.02.2023

			<ul style="list-style-type: none"> • Be aware of the copy & paste bug - Relative(e.g /wiki/spaces/OP/overview...) Links break/are empty after copy and paste them • https://jira.atlassian.com/browse/CONFLOUD-74361 	
347	New Tender - Migration	I	https://openimis.atlassian.net/wiki/spaces/OP/pages/3492282369/GIZ+Tender+1c+-+2022 <ul style="list-style-type: none"> • in selection process 	16.02.2023
348	Interactive Technical User	D	<ul style="list-style-type: none"> • Superadmin - business need • Technically, should we allow this? • agreement: <ul style="list-style-type: none"> ○ add an admin parameter on interactive user ○ prevent tehcn admin from being interactive users 	09.02.2023
349	CoreMIS Tender		https://openimis.atlassian.net/wiki/spaces/OP/pages/3497263105/GIZ+Tender+3+-+2022+-+CoreMIS <ul style="list-style-type: none"> • closed, waiting for proposals 	16.02.2023
350	Multi Tenancy		<ul style="list-style-type: none"> • Multi scheme provider vs. true multi tenancy • which data boundaries are needed? • use cases coming up in CM and DRC 	26.01.2023
351	Release 2023-04		<ul style="list-style-type: none"> • https://openimis.atlassian.net/wiki/spaces/OP/pages/3493265409/Release+2023-04 • will be mainly bug-fixing release 	02.02.2023
352	Wiki admin rights		<ul style="list-style-type: none"> • we are currently looking at the admin rights & user groups in atlassian 	16.02.2023
353	CORE MIS		<ul style="list-style-type: none"> • product from Worldbank with implementations in a few Social Protection programmes worldwide • merger project was kicked off 	09.02.2023

Deep Dive Topics:

- 2023-02-09, 2023-02-16: GovStack special
- anonymization in HIV scheme
- Multi scheme providers
- DHIS2 integration demo - Hiren (Swiss TPH)
- Kubernetes vs. Docker
- Payment Layer use-case
- Semantic versioning
- Mobile applications & API migration to modular
- Database compatibility
- OpenHIE Health Financing toward UHC - workflows
- 2022-01-19: Remodelling Products & Coverage (Benefit package):

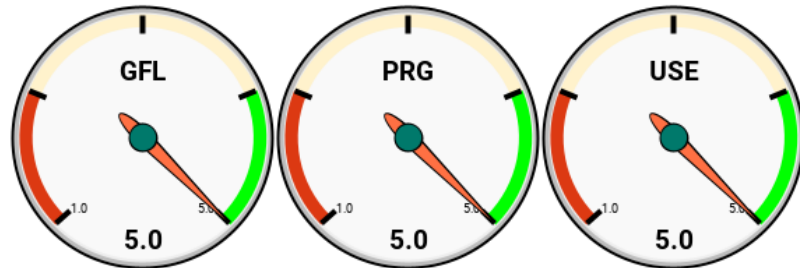
<https://openimis.atlassian.net/wiki/spaces/OP/pages/3463577606/Product+refactoring>

Meeting evaluation:

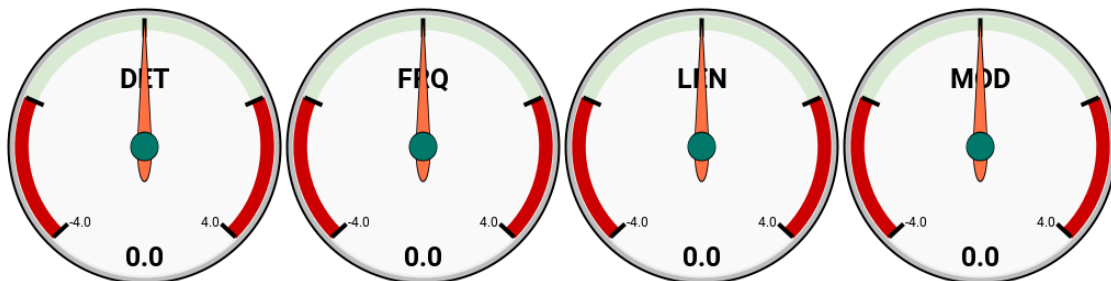
Records

2

Overall Mood



Event Parameters



Legend:

Overall mood (status):

GFL: General feeling about the meeting [very disappointed ... very glad]

PRG: General feeling about project progress (own project) [big trouble ... great success]

USE: Usefulness of the meeting (for own project) [not at all ... very much]

Event parameters of the meeting (XYZ needs to be ...):

DET: Degree of detail [more condensed ... more detailed]

FRQ: Frequency of the event [fewer ... more]

LEN: Length of the event [shorter ... longer]

MOD: Moderation [stricter ... more open]