

Blaise

Multimode Case Management

October 23th, 2023



Multimode Case Management System - Topics

- Introduction
 - Reasons for initiating the project
 - Requirements where do they originate from
- Concepts
 - Fielding strategies
 - Multimode launcher
 - Event driven approach
- Deliverables 5.14 Release
- Future developments
- Demo
- If any time left: New Cati functionality by Tim



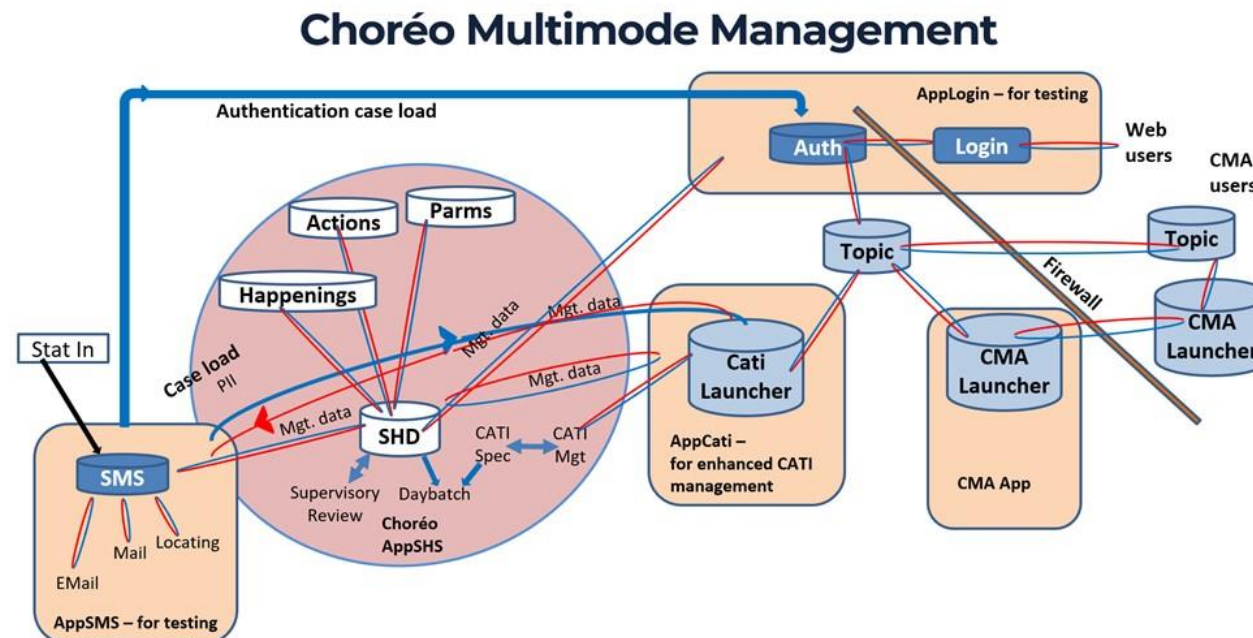
Introduction - Multimode Case Management (1)

- Some reasons for initiating the project
 - Blaise's focus has always been on collecting data and not on all aspects of actually managing surveys
 - To manage surveys, users always had to use their own systems next to Blaise such as a sample management system
 - There was only some basic functionality in Blaise for managing and coordinating different available modes (CAWI, CAPI and CATI) due to the fact that:
 - Existing CMA and CATI applications were developed independently from each other
 - For this reason these applications lack the functionality to exchange progress and status information
 - Implicitly this also means that it is currently difficult to create an overall status and progress overview/report
 - The project aims to address the above mentioned shortcomings



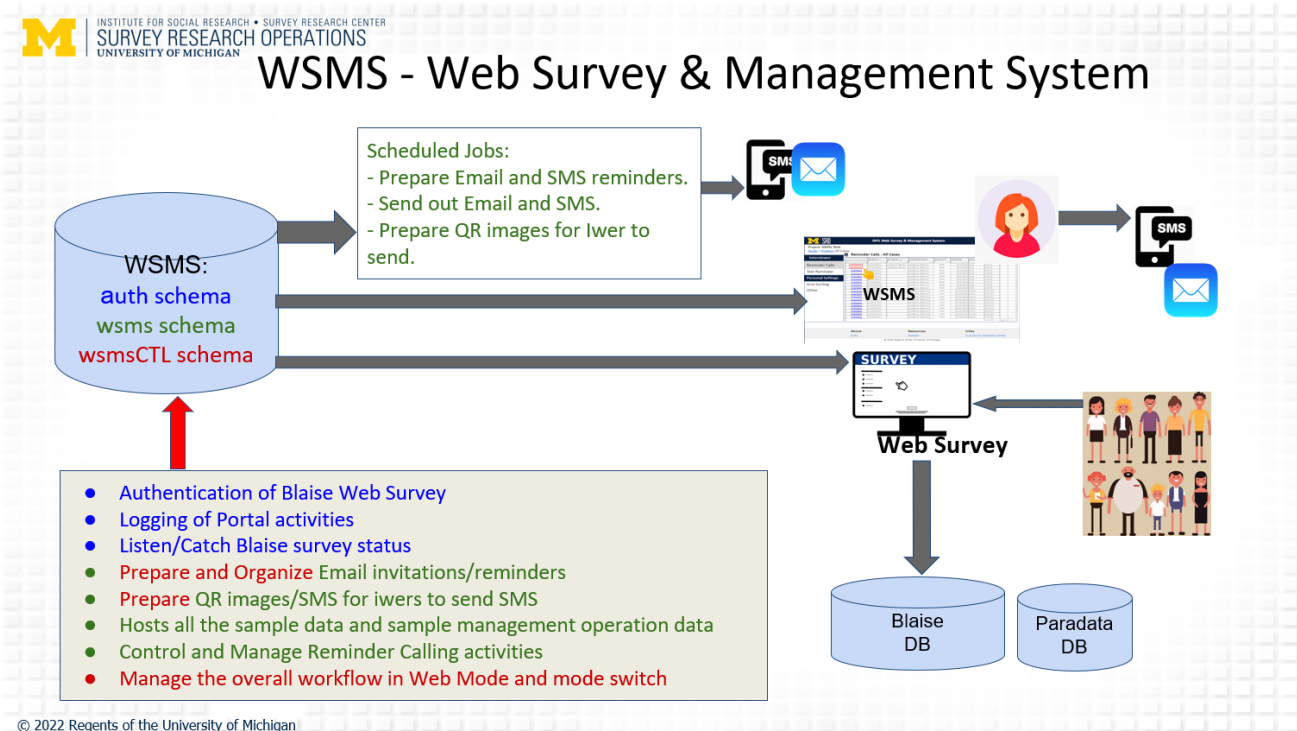
Introduction - Multimode Case Management (2a)

- Requirements and concepts are based on:
 - Specifications of the Choréo system
 - Created by the BCLUB Multimode Management Group (Coordinator: Mark M Pierzchala)



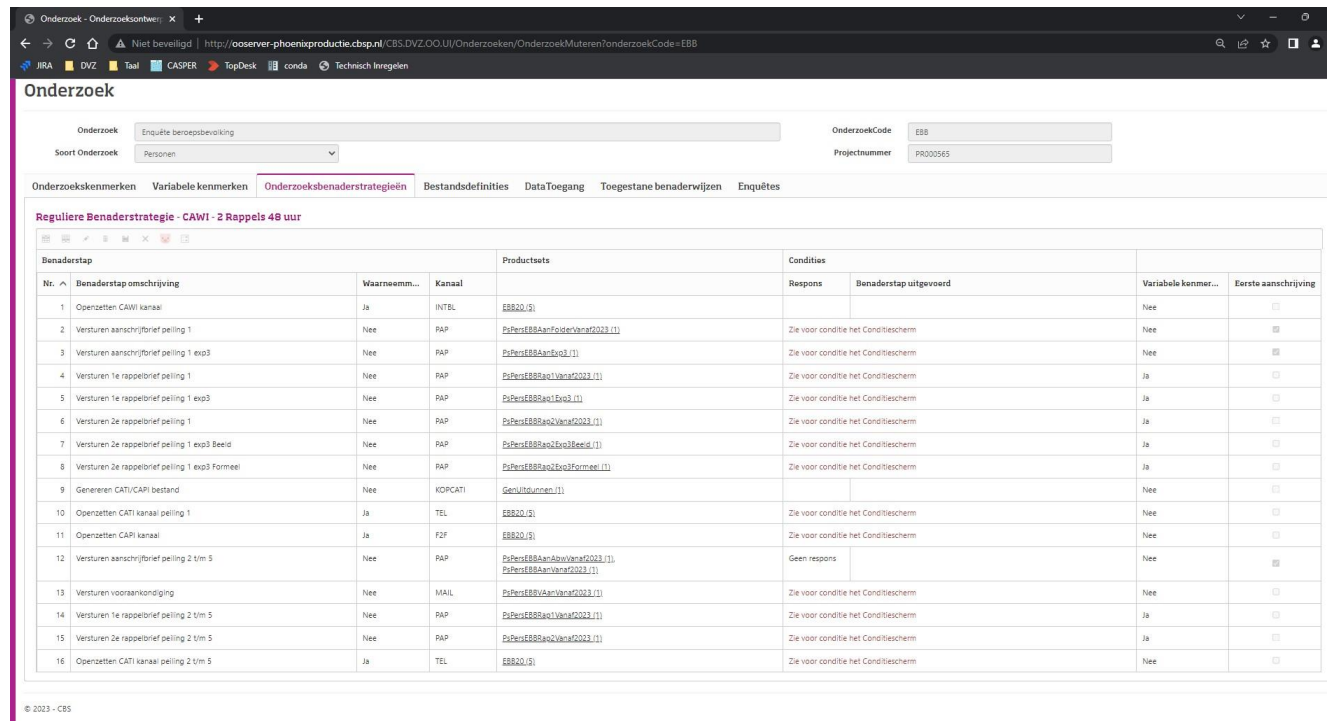
Introduction - Multimode Case Management (2b)

- Requirements and concepts are based on:
 - Presentation of a Web (based) Survey Management System
 - Developed by Institute for Social Research - University of Michigan (Coordinator: Gina Cheung)



Introduction - Multimode Case Management (2c)

- Requirements and concepts are based on:
 - Functionality provided by the Phoenix Survey Management System
 - Developed by Statistics Netherlands



The screenshot displays the Phoenix Survey Management System interface. The main content area shows a table titled "Reguliere Benaderstrategie - CAWI - 2 Rappels 48 uur". The table has columns for "Benaderstap", "Productsets", and "Conditie". The "Benaderstap" column includes details like "Nr.", "Benaderstap omschrijving", "Waarneem...", "Kanaal", "Productsets", "Conditie", "Respons", "Benaderstap uitgevoerd", "Variabele kenmer...", and "Eerste aanschrijving".

Benaderstap		Productsets		Conditie		Variable kenmer...	Eerste aanschrijving	
Nr.	Benaderstap omschrijving	Waarneem...	Kanaal	Productsets	Respons	Benaderstap uitgevoerd	Variable kenmer...	Eerste aanschrijving
1	Opzetten CAWI kanaal	Ja	INTBL	EBB20_5			Nee	<input type="checkbox"/>
2	Versturen aanschrijfbrief pelling 1	Nee	PAP	PaPerEBBaanFolderVanaf2023_11	Zie voor conditie het Conditie scherm		Nee	<input type="checkbox"/>
3	Versturen aanschrijfbrief pelling 1 exp3	Nee	PAP	PaPerEBBaanExp3_11	Zie voor conditie het Conditie scherm		Nee	<input type="checkbox"/>
4	Versturen 1e rappelbrief pelling 1	Nee	PAP	PaPerEBBaanVanaf2023_11	Zie voor conditie het Conditie scherm		Ja	<input type="checkbox"/>
5	Versturen 1e rappelbrief pelling 1 exp3	Nee	PAP	PaPerEBBaanExp3_11	Zie voor conditie het Conditie scherm		Ja	<input type="checkbox"/>
6	Versturen 2e rappelbrief pelling 1	Nee	PAP	PaPerEBBaanVanaf2023_11	Zie voor conditie het Conditie scherm		Ja	<input type="checkbox"/>
7	Versturen 2e rappelbrief pelling 1 exp3 Beeld	Nee	PAP	PaPerEBBaanExp3Beeld_11	Zie voor conditie het Conditie scherm		Ja	<input type="checkbox"/>
8	Versturen 2e rappelbrief pelling 1 exp3 Formeel	Nee	PAP	PaPerEBBaanExp3Formeel_11	Zie voor conditie het Conditie scherm		Ja	<input type="checkbox"/>
9	Genereren CATI/CAPI bestand	Nee	KOPCATI	GenUitsourcen_11			Nee	<input type="checkbox"/>
10	Opzetten CATI kanaal pelling 1	Ja	TEL	EBB20_5	Zie voor conditie het Conditie scherm		Nee	<input type="checkbox"/>
11	Opzetten CAPI kanaal	Ja	FZF	EBB20_5	Zie voor conditie het Conditie scherm		Nee	<input type="checkbox"/>
12	Versturen aanschrijfbrief pelling 2 t/m 5	Nee	PAP	PaPerEBBaanVanaf2023_11, PaPerEBBaanVanaf2023_11	Geen respons		Nee	<input type="checkbox"/>
13	Versturen vooraankondiging	Nee	MAIL	PaPerEBBaanVanaf2023_11	Zie voor conditie het Conditie scherm		Nee	<input type="checkbox"/>
14	Versturen 1e rappelbrief pelling 2 t/m 5	Nee	PAP	PaPerEBBaanVanaf2023_11	Zie voor conditie het Conditie scherm		Ja	<input type="checkbox"/>
15	Versturen 2e rappelbrief pelling 2 t/m 5	Nee	PAP	PaPerEBBaanVanaf2023_11	Zie voor conditie het Conditie scherm		Ja	<input type="checkbox"/>
16	Opzetten CATI kanaal pelling 2 t/m 5	Ja	TEL	EBB20_5	Zie voor conditie het Conditie scherm		Nee	<input type="checkbox"/>

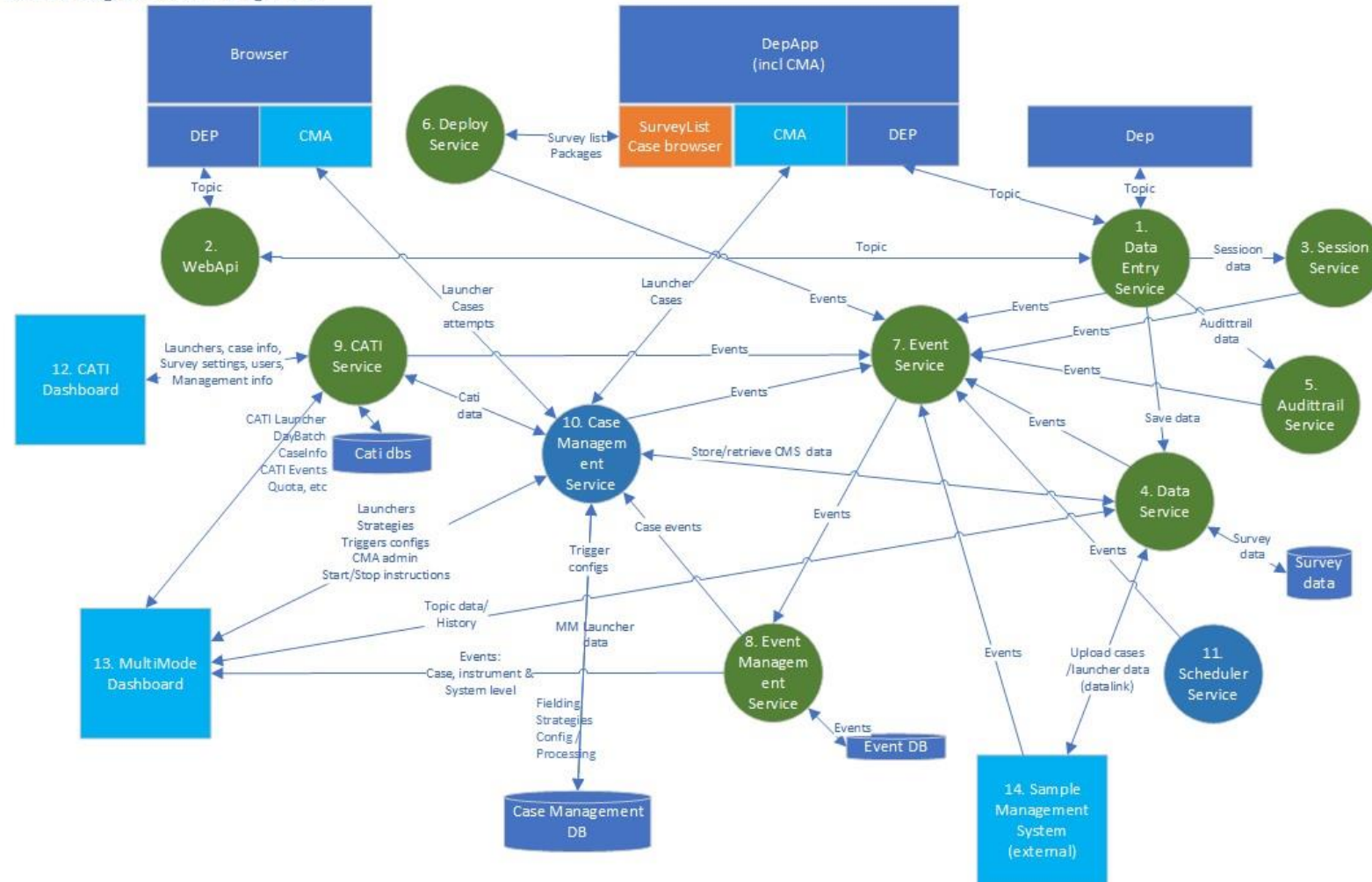
Introduction - Multimode Case Management (2d)

- Requirements and concepts are further based on:
 - Ideas from the Blaise team
- Based on all gathered requirements we embedded a multimode case management service in the existing Blaise application landscape
- This application landscape can be depicted as follows:



Introduction - Multimode Case Management (2e)

Context Diagram - Case Management



Concepts – Fielding strategies (1)

- Fielding Strategies
 - An instrument typically has a Fielding Strategy:
 - how and when will respondents be contacted and through what mode?
 - Often, there are multiple modes involved, each with their own costs:
 - By web (CAWI), cheapest
 - By phone (CATI), more expensive
 - By visiting (CAPI), most expensive
 - Types of fielding strategies:
 - Sequential: One mode is fielded first then another mode (or more) is fielded later.
 - Concurrent: Modes are open simultaneously



Concepts – Fielding strategies (2)

- Fielding Strategy Templates
 - Blaise allows you to set up fielding strategy templates and their related strategy template steps
 - At survey deployment time such a fielding strategy template can be applied to a certain survey
 - At that time the actual start and end dates for each supported mode are determined/known
 - The next 2 slides show examples how such fielding strategy templates could look like



Concepts – Fielding strategies (3)

- Example of a sequential fielding strategy template:

Fielding strategy template steps

Strategy Template name

Sequential strategy - 6 weeks - 2 week cycle

Filters ▾

Showing 1 to 3 of 3 entries

« Previous 1 Next »

Id	Channel	Step Description	Used for observation	Starts at day	Ends at day	Created	Modified			
1	CAWI	Start CAWI	Yes	1	14	2023-09-28 13:55:05	2023-09-28 13:55:05			
2	CATI	Start CATI	Yes	15	28	2023-09-28 13:55:30	2023-09-28 13:55:30			
3	CAPI	Start CAPI	Yes	29	42	2023-09-28 13:55:48	2023-09-28 13:55:48			

Showing 1 to 3 of 3 entries

« Previous 1 Next »

[Back to fielding strategy templates](#)

[Add new fielding strategy template step](#)



Connected to: localhost:8031 - Serverpark: CMA_Surveys



Concepts – Fielding strategies (4)

- Example of a concurrent fielding strategy template:

Fielding strategy template steps

Strategy Template name

Concurrent strategy - 6 weeks

Filters ▾

Showing 1 to 3 of 3 entries

« Previous 1 Next »

Id	Channel	Step Description	Used for observation	Starts at day	Ends at day	Created	Modified			
4	CAWI	Start CAWI	Yes	1	42	2023-10-09 11:23:44	2023-10-09 11:23:44			
5	CATI	Start CATI	Yes	1	42	2023-10-09 11:24:14	2023-10-09 11:24:14			
6	CAPI	Start CAPI	Yes	1	42	2023-10-09 11:24:38	2023-10-09 11:24:38			

Showing 1 to 3 of 3 entries

« Previous 1 Next »

[Back to fielding strategy templates](#)

[Add new fielding strategy template step](#)

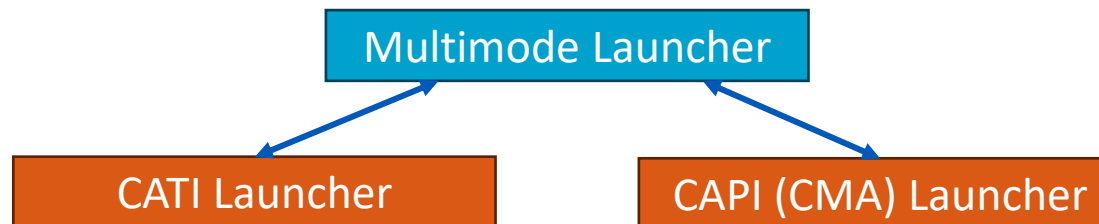


Connected to: localhost:8031 - Serverpark: CMA_Surveys



Concepts – Multimode launcher (1)

- An important requirement for the Multimode Case Management system was to:
 - Keep existing functionality of CATI and CMA (so no or only minor changes were allowed to these applications)
- We achieved this by introducing a Multimode Launcher for central administration of cases which sits on top of the existing CAPI (CMA) and CATI launchers



Concepts – Multimode launcher (2)

- Principles:

- Supported Modes for a topic instrument are defined in its .blax file:

```
DATAMODEL CMA_HealthSurvey "Health Survey"  
  MODES = CAWI, CATI, CAPI  
  LANGUAGES = ENG
```

- For all cases of a specific multimode survey a Multimode launcher record will be created
- All launchers (Multimode, CMA and CATI) must be kept in sync if a change is made to a case in any mode.
- The latter is realized by using an event driven approach
 - Events that are raised by the Blaise system on certain occasions (like start of an interview or assignment of a case to an interviewer) will be processed in order to check whether an action should be triggered
- How this event processing actually works will be explained in the next slides



Concepts – Event processing (1)

- Events are used to update various parts of the system like launchers, daybatches, etc.
- Updates to the system are customizable and made possible through 'Event Trigger Configurations'
- An 'Event Trigger Configuration' has the following attributes:
 - Event :
 - Event type to which the trigger configuration applies
 - Description :
 - Description for the trigger configuration, purely for informational purpose
 - Condition:
 - Condition to be evaluated. A condition has to be a valid XPath expression which can either evaluate to true or false for an event. It may also contain logical operators like AND and OR, NOT. An example of a valid XPath expression is:
`@Mode='CAWI' and @Reason='Aborted'`
 - Pre-Condition:
 - Pre-Condition to be evaluated. Optional E.g. to check whether a field in the CATI launcher database has a specific value before executing the actions of the configuration
 - Trigger Actions:
 - Actions to be executed if both the Condition and Pre-Condition (if present) expressions evaluate to true



Concepts – Event processing (3)

Example of events and event trigger configurations

Description	Event	Payload	Condition	PreCondition	TriggerActions
Case start	KeyvalueDetermined	<KeyvalueDeterminedEvent TimeStamp="2023-06-30T14:11:51.6619728+02:00" InstrumentId="799e9622-6a7d-4c2b-ae22-3151a9fb9514" SessionId="5289953e-a657-4038-a01c-6ea792864ac6" Mode="CAWI" Language="" DataEntrySettings="StrictInterviewing" PrimaryKeyValue="57 " UserName="Anonymous" Status="Read" />	@Mode='CAWI' and (@Status='Read' or @Status='New')		<ul style="list-style-type: none"> MMLA.OperationalStatus='{@Status}' MMLA.ModifiedBy='{@UserName}'
Case aborted	EndSession	<EndSessionEvent TimeStamp="2023-06-30T14:19:32.44343+02:00" InstrumentId="799e9622-6a7d-4c2b-ae22-3151a9fb9514" SessionId="48df8cb7-b162-426a-a848-b0db3349eb13" Mode="CAWI" Language="" DataEntrySettings="StrictInterviewing" PrimaryKeyValue="371 " UserName="Anonymous" Reason="Aborted" />	@Mode='CAWI' and @Reason='Aborted'		<ul style="list-style-type: none"> MMLA.OperationalStatus='{@Reason}' MMLA.ModifiedBy='{@UserName}'
Case Completed	EndSession	<EndSessionEvent TimeStamp="2023-06-30T14:12:12.5952545+02:00" InstrumentId="799e9622-6a7d-4c2b-ae22-3151a9fb9514" SessionId="5289953e-a657-4038-a01c-6ea792864ac6" Mode="CAWI" Language="" DataEntrySettings="StrictInterviewing" PrimaryKeyValue="57 " UserName="Anonymous" Reason="Completed" />	@Mode='CAWI' and @Reason='Completed'		<ul style="list-style-type: none"> MMLA.OperationalStatus='{@Reason}' MMLA.ModifiedBy='{@UserName}'
Case Expired	Save	<RecordInfo ValidationStatus="NotChecked" ActiveMode="CAWI" DataEntryStatus="Expired" PrimaryKeyValue=" 2" TheKey="2"/>	@ActiveMode='CAWI' and @DataEntryStatus='Expired'		<ul style="list-style-type: none"> MMLA.OperationalStatus='{@DataEntryStatus}'



Concepts – Event processing (2)

- Defined event trigger actions have a prefix which defines the target of the action
- The following prefixes are supported:
 - CAPI. Updates the CMA Launcher record with the specified values
 - CATI. Updates the CATI Launcher record with the specified values
 - MMLA. Updates the Multimode Launcher record with the specified values
 - DBAT. Updates the Daybatch record with the specified values
 - DBCI. Updates the Daybatch case info record with the specified values
 - FUNC. Executes a predefined function which is implemented in the CMS service
 - MSUX. Executes a Manipula setup



Concepts – Event processing (4)

Currently supported events are:

- StartSession
- EndSession
- Save
- CaseIssued
- DialAttemptEnded
- KeyvalueDetermined
- AppointmentMade
- CaseCompleted
- DayBatchCreatedOrUpdated



Concepts – Event processing (5)

Some challenges with regard to Event processing

- Users should be able to define logic (condition, pre-condition, trigger actions) of what data to update in case of multiple sessions possibly using different modes for a particular case (if e.g. a case was started through the Web and followed-up through CATI)
- Some modes are offline (e.g. CAPI) so there can be a delay between the actual event and the notification to the system of that event and cases may have been completed between downloading the case and the actual visit



Concepts – Event processing (6)

Event scheduling service for Case Management functions

- This functionality can be used to schedule the execution of case management functions like:
 - Creation of daybatch for a particular instrument
 - Creation of launcher records for CATI or CAPI
 - Starting of Stopping of the event processing
- Going forward we will add/support more case management functions which can be scheduled



Deliverables 5.14 Release

- Dashboard will be extended with
 - Functionality to maintain:
 - Fielding Strategy Templates
 - Survey Fielding Strategies
 - Event Trigger Configurations (trigger actions)
 - Event Scheduler Configurations
 - Functionality to View and Select
 - Multi mode launcher cases
 - CAPI (CMA) launcher cases
 - CATI launcher cases
 - Case Events
 - Admin functionality like
 - Starting / Stopping the event processing; reloading configurations



Goals Multimode Case Management 5.14 Release

- Deliver the foundation for a flexible, highly configurable and extendable Multimode Case Management system
 - Backwards compatible with existing CATI and CMA applications
- Deliver a set of Event Trigger Configurations, which can be used to keep the CATI, CAPI and Multimode launchers in sync with regard to status updates
- Ready to be (beta) tested by the Blaise community
 - We are looking for Blaise users who want to:
 - Participate in the testing
 - Give us feedback about findings
 - Advise us about possible improvements
 - If you are interested, please send an e-mail to lpm.rouschen@cbs.nl and I'll will put you on the list



Future Developments (1)

- Implement CMA Admin tool functionality in Multimode dashboard
 - Configure Administrators, Managers, Supervisors and interviewers on survey level
 - Assign cases to supervisors
 - Assign cases to interviewers
 - Maintain cases:
 - View, Accept, Reopen, Close, Transfer, Restore, Release
 - View attempts
 - Export survey data
 - Management/Supervisor functions like: consistency checks, custom scripts (Manipula), create instructions, view logging of interviewers and progress reports



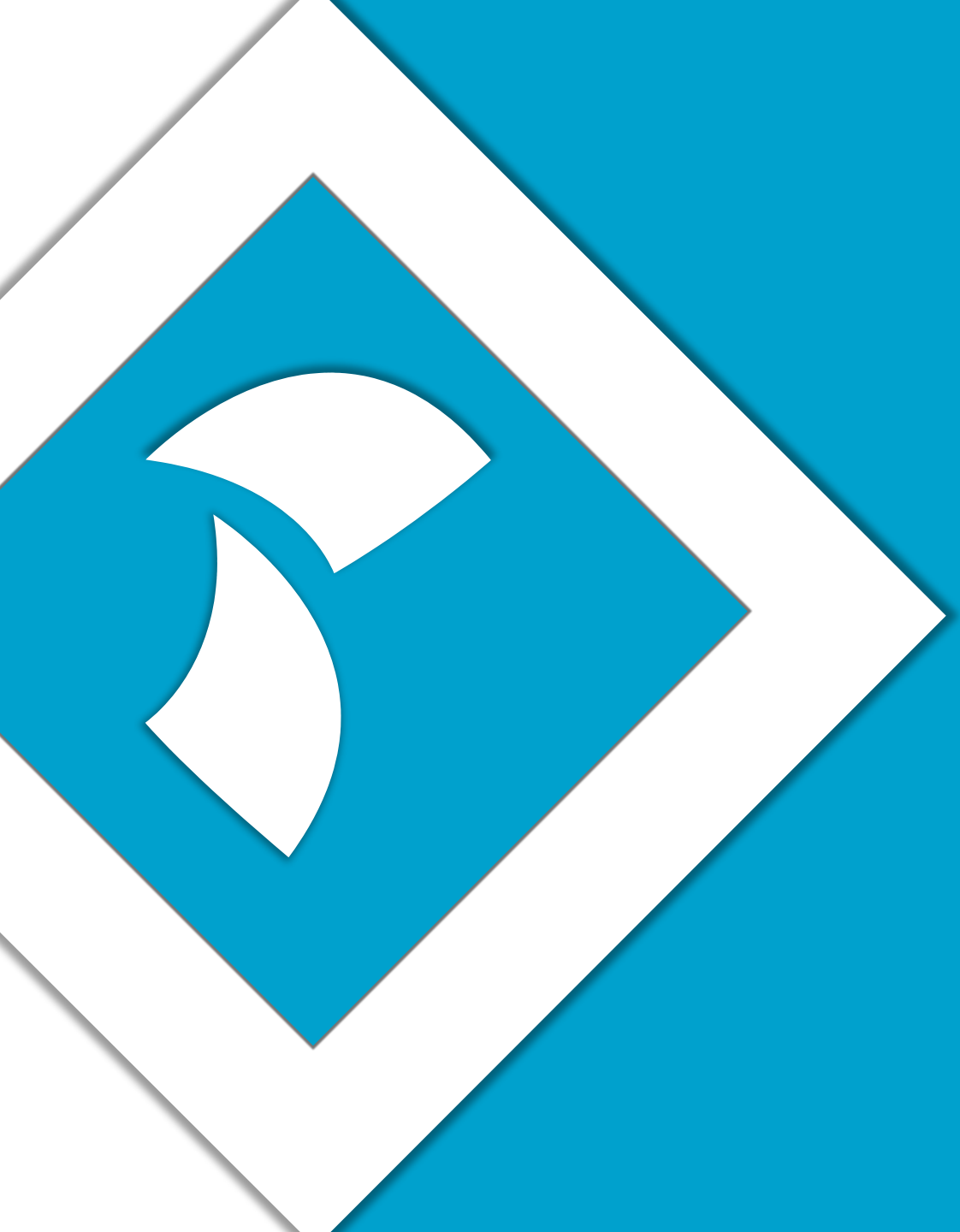
Future Developments (2)

- Introduce some form of sample management system and an interface for sample management systems that may already be in place
 - Assign surveys and link cases to respondents
 - Securely store Personally Identifiable Information (PII) and synchronize updates determined during fieldwork
- Adding support for mode CAVI
- Adding additional channels like PAPER, SMS and Email in order to support:
 - Invitations, reminders, thank-you letters, etc. based on templates
- Customizable reports which provide for instance:
 - Values of key variables (KPIs, Quotas)
 - Log of contact attempts
 - Operational status codes

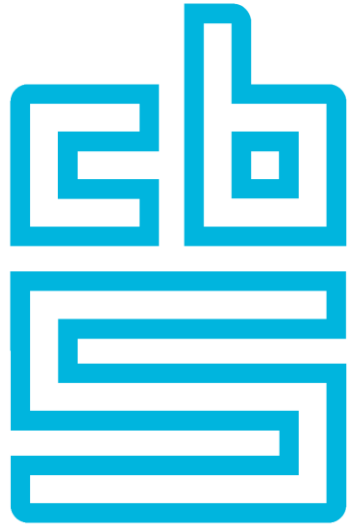


Multimode Case Management Demo





**Thank you
for your time**



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