COOPERATION ON MULTI-MODE DATA COLLECTION (MMDC)

MIXED MODE DESIGNS FOR SOCIAL SURVEYS - MIMOD

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WP3: Case management in MMDC and related data logistics

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Introduction

The aim of this report is to build a first knowledge base about the components and types of Case Management Systems that are currently in practice within the ESS. This knowledge base does not claim to be complete because its main purpose is the preparation of deliverable 3 "Open structured telephone interview survey on CMS (formerly Standardized survey on CMS)". It shall give an orientation of the different possible forms of Case Management Systems and by so it will drive the discussions in the telephone interviews. Nevertheless, by the means of desktop review and the analysis of the MIMOD survey data of section E (see deliverable 2 for technical information about the dataset and analysis methods) the picture about the landscape of Case Management System within the ESS became much clearer.

In the first part of this report all possible components of a full Case Management System that were found during the desktop review are described. It became clear that the components can be grouped in domains and subdomains. As such structuring of components could be very helpful in understanding the complexity of such systems the components are presented by domain and subdomain.

In the second part of this report a typology of Case Management Systems is drafted. This was being done on the basis of the MIMOD survey data. It seems that the Case Management System within the ESS cannot be typed along one single aspect. Rather the systems differ in 4 main dimensions. That is the degree to which their components are integrated in one single system, the completeness of components in use, the degree of external software usage and the degree of survey integration. In this second part of the report a typology for each of these 4 dimensions will be introduced and the CMS of each country will be assigned the dimension types.

Possible Components of a Case Management System

As the literature review on case management systems was not as fruitful as hoped, the desktop exercise concentrated on the review of commercial data collection systems that are available online¹ plus the summary of experiences with the in house developed system STATsurv. As every data collection system offers slightly different components and each component offers different tools, a great amount of possible technical features could be collected. Of these, the most promising features for an effective and complete Case Management System were grouped into function domains and subdomains.

As a result we think that a high quality Case Management System consists of 4 domains: The domain of the survey instrument, of staff management, of case management and of quality assurance. Figure 1 shows these domains and the components for each subdomain.

Figure 1: The 4 domains of a Data Collection System and their technical components

Survey instrument Staff Management Case Management Quality Assurance Staff administration Case administration Monitoring and Reporting Survey instrument Question Archive CATI/CAPI agent data Sample to survey assignment Monitoring and Question(naire) Designer administration · Case data administration Reporting CATI/CAPI payment tool Questionnaire · Special data collection Case workflow instruments · Case workflow designer · Questionnaire Metadata Case workflow Access to survey instrument Communication with cases Virtual office GUI CATI/CAPI Written respondent communication designer Virtual office GUI CATI/CAPI Sending and receiving supervisors respondent communication Contact protocol

In the following chapters each domain will be introduced by a description of its components. For each component the most important features for an effective and high quality system will be listed. The descriptions are formatted as tables in order to easier serve as a checklist of necessary component features.

¹ The following commercial data collection products were reviewed: BLAISE, COLLECTICA, MOTUS, QuestionPro, Questback/Unipark, 1ka, SurveyMonkey and LimeSurvey.

Survey instrument

In the domain of the survey instrument all components regarding the production of the instrument, the instrument itself and its documentation are included. Also the components with which the staff members gain access to the instrument for the cases they should process are included in this domain. The following tables describe these components in detail and list possible tool features.

Table 1: Survey instrument components for producing and running the instrument

	Survey instru	nent
Component	Description	Possible tool features
Question Archive	A library of all the questions in use in any survey. The questions can be easily looked up by any member in the NSI and be reused in another survey. That way, harmonisation between surveys and the compliance to question design standards is supported.	 Categorisation/Keyword system by topic of the question Search and find Versioning of questions; link to survey Experienced answer frequency Question Evaluation/Test results Questions can be directly used for questionnaire design component
Question(naire) Designer	Tools with which the questions and the questionnaires are specified. Modern tools do not need much programming skills anymore. Instead the questions are designed by a point and click graphical user interface. That way the division of labour is supported.	 Intuitive, easy to learn GUI All question specifications can be done with no or low level programming skills Live Integration of help on guidelines and standards of questionnaire design Instant Preview of the questions in all modes and devices Effective Testing possibilities of questionnaire logics (routing, checks, autofills) Work collaboration functions (like to-do lists, comments, status info, and current person in charge)
Questionnaire	The electronic questionnaire itself. With it the interviewer and/or respondents can give the answers to the survey questions. Modern questionnaire tools demand highest usability. That way response burden and measurement errors are reduced.	 A full set of different question types A full set of predefined question- and answer text elements (helping texts, definition texts, unit texts) Routing logics Plausibility and data entry checks Calculated string and number variables that can be used throughout the questionnaire Link to sample data and system data Usage of picture, logos, audio and video data Pause and continue; prevention of repeated fill outs Special "don't know" and "refusal" category treatment possibilities 1 programmed instrument usable for

Special data	New instruments like Diary Apps,	 any mode (CAWI, CAPI, CATI, PAPI) and any device (PC, Tablet, Smartphone) Multiple Languages Highest data protection OUT OF SCOPE for this Workpackage. More
collection instruments	Activity recording Apps, Data collection devices like smart watch etc. In future Case management systems, it should be possible to easily plug in these kinds of instruments, either instead of the questionnaire or by its side. That way the integration of new technologies would be supported.	research is needed in this field.
Questionnaire Metadata	With this component the questionnaire specifications can be displayed, printed or exported in user and/or machine friendly way. That way the questionnaire can be documented and shared in an effective way. This supports the transparency about the data collection process and the flow of information between institutions.	 Codebook document exports Questionnaire document exports Metadata file export in metadata standards like DDI Exports can be customized in regards to which questions and attributes to be exported (e.g. no plausibility checks, only working time related questions)

Table 2: Survey instrument components for giving staff access to the instrument

	Access to survey instrument	for staff members
Component	Description	Possible tool features
Virtual office GUI CATI/CAPI agents	The virtual office GUI is the agent's control centre about the assigned cases to be processed, access to their questionnaires, communication with the NSI and overview about individual performance. That way the agent can independently work on his/her cases without the need of transferring information outside of the system.	 Overview of assigned cases with their main attributes and status information Easy to read case history (including events that occurred in another mode) Assistance for optimal route planning (e.g. integration of maps) Assistance for setting appointments (e.g. integration of calendars) Protocol of any contact and its outcome Clarification of the eligibility of the cases Access to questionnaire Sending and receiving messages to/from supervisor Overview of own performance Device independence Fully functional also offline
Virtual office	The virtual office GUI for CATI/CAPI	 Shift Administration GUI (Start, end,
GUI CATI/CAPI	Supervisors is the centre for	maximum call/contacts per case, priority
supervisors	managing an interviewing shift,	of agents and/or cases)

assign cases to specific agents if needed and keep track of the shift's performance in regards to data quality and response rates.	•	Designing groups of Agents for survey (e.g. language,) Agent assignment to Income-calls Overview of performance by Agents in Survey Overview of performance of shift in
		regards to data quality

Staff Management

For the management of staff at least the components agent data administration and payment tool are needed. These components will be described in the following table about staff administration.

Table 3: Staff management components for staff administration

	Staff admini	istration
Component	Description	Possible tool features
CATI/CAPI agent data administration	With this component the interviewer staff and their attributes can be viewed and edited (e.g. name, address, contract etc.). Any change is protocolled and is in effect immediately. That way the promptly processing of staff changes is supported.	 Intuitive GUI for administering individual agent and their attributes. Editing history Multiple agent editing based on freely definable rules Live updating in all components Work collaboration functions (like to-do lists, comments, status info, and current person in charge) Sending and receiving messages
CATI/CAPI payment tool	This component lists the performance relevant for payment of each agent. It can also automatically produce invoices and/or transfer the payment to the agent's account. That way the work load for the field manager staff is reduced and money transfers are transparent.	 Dashboard overviewing the status of payments to do and finished payments. Export and/or sending invoices Export and/or sending payment transfer orders Export payment balance overviews

Case Management

Case management shall be defined as all components in regards to case sample data administration, the workflow of a case from start to end of the survey and communication between the individual case and the survey institute. The following tables describe each case management component and list their possible tool features.

Table 4: Case management components for case administrations

Case administration		
Component	Description	Possible tool features
Sample to survey assignment	For probability based samples this component offers the possibility to import the cases and their attributes in an efficient way. For non-probability samples the component offers different possibilities for cases to opt in to the survey. A strong sample to survey assignment component allows all kinds of cases (e.g. household, person, businesses) to be transferred to a survey, regardless of their origin (e.g. predefined dataset, from previous wave, anonymous from an optin website ² etc.). That way flexibility in regards to the units to be surveyed is assured, making the system usable for any kind of survey.	 Import of existing dataset of cases and their attributes Data validation checks before Import Transferring cases already in the system from one survey to the other (i.e. for Panel surveys) Provide access to survey via login or without the need for login Pre-built opt in elements (e.g. electronic survey adsfor websites³, social networks, email etc.)
Sample Data administration	With this component the cases and their attributes can be viewed and edited (e.g. change of amount of household members, change of address or contact information etc.). Any change is protocolled and is in effect immediately. That way the promptly processing of cases is supported.	 Intuitive GUI for administering individual cases and their attributes. Editing history Multiple case editing based on freely definable rules Live updating in all components Work collaboration functions (like to-do lists, comments, status info, and current person in charge)

Table 5: Case management components for case workflow

Case workflow		
Component	Description	Possible tool features
Case	Tool with which the survey specific	Intuitive, easy to learn GUI

² A website on which any visitor of this website gets information about the survey so he/she can make the decision about taking part or not. Also a direct link to access the survey is provided at that website.

³ Text/Multimedia elements that can automatically be plugged in into any website. These elements contain the invitation tot he survey and a direct link for accessing it.

Management workflow designer	case management workflow can be modelled. Modern tools do not need much programming skills anymore. Instead the workflow is designed by a point and click graphical user interface. That way the division of labour is supported and the complexity of mixed-mode survey workflows becomes manageable more easily.	 All workflow specifications can be done with no or low level programming skills Live Integration of help on guidelines and standards of survey mixed-mode design Visualization of workflow model Effective Testing possibilities of workflow logics Work collaboration functions (like to-do lists, comments, status info, and current person in charge) Survey Workflow archive with reusable elements
Case management workflow	The case management workflow component is responsible for putting the mixed-mode survey design into practice. It controls at what time which case is interviewed in which mode. Also it controls which communications are sent to the cases. Modern case management workflow tools assure the automated flow through the field phase via predefined tracks but also allow for individual case treatment (e.g. switching one certain case to another mode, sending a letter again etc.).	 Full set of Action elements (e.g. start CAPI data collection; send reminder; set case as REFUSAL) Full set of decision elements (e.g. if questionnaire=finished; if sample group=2; if today is later than SEP 30th etc.) Parallel workflow tracks possible (e.g. CATI track and CAPI track; track for experiment group 1 and control group) Cases are processed from start to end fully automatically Individual case treatment always possible (e.g. switching case to another track or a new special track; execute one single special action) Multiple case treatment based on freely definable rules always possible Overview of progress of all cases within the survey workflow Detailed view of progress of and individual case within the survey workflow

Table 6: Case management components for communication with cases

Communication with cases		
Component	Description	Possible tool features
Written respondent communication designer	Tool with which written communication to the respondent, such as Email, letter or SMS, can be easily designed. A modern design tool is able to integrate any data from another component (e.g. family name; answer to a survey question;	 Intuitive, easy to learn GUI All text specifications can be done with no or low level programming skills Live Integration of help on guidelines and standards of respondent communication Data from any component can be used

	date of completion), multimedia elements and formatting within the text. That way the communication can be tailored to the case's situation although standard templates are used.	 within the text Text can be easily formatted Quick Preview of the template for a certain case or a test case. Communication archive with reusable
Sending and receiving respondent communication	This technical component is in charge for sending and receiving communication to and from the respondent. Communication should be possible in multiple channels (e.g. letter, postcards, emails, SMS, phone call) and at all times. That way communication can be tailored to the needs of the respondent, decreasing response burden and increasing motivation.	 elements. Sending and receiving written postal documents like letter, flyer, postcards, certified mail etc. Sending and receiving Emails Sending and receiving SMS Sending and receiving internet messages like WhatsApp, Messenger etc. Sending and receiving phone calls Automated massive sendings Individual manual instant sending
Contact protocol	With this component all contacts – regardless of data collection mode and communication channel - and their outcomes are unified in a case history protocol. Staff is able to view this protocol and edit it. That way all communications that have happened between the respondent and the surveyor is transparent within the period of field phase.	 Protocolling works for all data collection modes and communication channel in a comparable way. Contacts and their outcomes can be easily differentiated by a categorisation system. Protocol can be viewed and edited by all legitimate staff members

Quality Assurance

Quality assurance is achieved by the possibility to track the status of the cases, the questionnaire and the agents at any time in regards to predefined quality and performance indicators. This is achieved by the component Monitoring and Reporting which will be described in the following table.

Table 7: Quality Assurance component for monitoring and reporting

Monitoring and Reporting		
Component	Description	Possible tool features
Monitoring and Reporting	With this component performance and quality indicators about the data collection as a whole, the questionnaire and the agents are listed and/or visualized. The indicators may be viewed at live (Monitoring) or exported at certain points in time as datasets, tables or graphs (Reporting). That way it allows field managers to adapt to the situation at any given time, assuring	 A variety of data sources are combined for the quality and performance indicators (e.g. paradata, survey data, contact protocol data, administrative data etc.) A full set of standardized quality indicators in regards to non-response error A full set of standardized quality indicators in regards to measurement

high data quality. By a standardization of performance and quality indicators surveys can be compared to each other, supporting the exchange of best practices for future data collection waves.

error

- A full set of standardized performance indicators for agents
- Live Dashboard overview of the most important quality and performance indicators
- Overview has "drill in"-function until case(s)/agent(s) are listed.
- Reports are produced automatically in certain time intervals
- Automated warnings if certain benchmarks are exceeded

Preliminary Typology of Case Management Systems

Based on the MIMOD survey data section E (see deliverable 2 for technical information) the CMS within the ESS can be differentiated by 4 main dimensions. Each of these dimensions will be described in the following chapters and the CMS of the ESS countries are assigned to a dimension type. Unfortunately the survey data was incomplete or missing for quite a few countries. For that reason these typologies should be seen as preliminary and will be further completed via the telephone interviews of deliverable 3. It is also to be expected that after the insights of deliverable 3 some countries will be switched to another type.

Degree of component integration

The first main dimension to distinguish the CMS is the degree to which the different components are integrated in one system. Integration can be reached by having the components linked to each other in a way that information is automatically transferred from one component to the other. Component integration also means that cases or other objects can be efficiently moved from one component to the other, that an update of object data and that a monitoring about the objects state is always possible, regardless in which component they are in.

By the analysis of the MIMOD survey data it became clear that most data collection systems differ in the way the domain survey instrument is integrated in the other three domains (Staff administration, case management, quality assurance). In terms of component integration the following types can be differentiated:

If All 4 domains are integrated in one system: This type is the fully integrated data collection system. This means that all the components needed for data collection are part of one single system. Therefore the flow of information and objects is given in a very efficient and automated way. The following 6 countries seem to already have implemented such integrated system and run it for all their surveys:

Austria, Portugal, Lithuania, Estonia, Latvia, Poland

I2 Transition from old systems of type I5 to new system of type I1: Here the old data collection system was of type 5 but a new system of type 1 has been developed or is about to finish development. The NSI is at the point of switching the surveys into the new type 1 system. Some NSIs are further than the others with this process. On the one end of the scope all surveys are still in the old system but the start of moving them into the new system will be in very short time. On the other end of the scope the new system is already running for quite some surveys and there is only a few missing to be integrated into the new system. The following 5 countries seem to be in transition:

The Netherlands, Spain, Finland, Italy, Norway

In this type of data collection system the three domains staff administration, case management and quality assurance are integrated in one system but the components of the survey instrument domain make up a system of their own. The flow of information between collection management and questionnaire might need more manual work but the systems provide greater flexibility in regards to exchanging survey instrument components. The following 5 countries seem to use such a system:

Greece, Hungary, France, Ireland, Czech Republic

14 Multiple survey instruments with their own staff-, case management and quality assurance systems: In this type there are multiple systems in use, each of which has their own domain components. Only one country seems to run different systems in parallel, that is Sweden.

I5 Most domain components are stand-alone tools: In this type the tools used for each domain and their components are loosely connected. Also the survey instrument is not fully integrated into the system. In such systems there is lots of manually work needed to transfer information from one tool to the other. The following 7 countries seem to use a data collection system of stand-alone tools:

Belgium, Switzerland, Cyprus, Bulgaria, Romania, Iceland, Slovak Republic

Missing or incomplete data about system integration: Slovenia, Luxembourg, Croatia, Malta, Germany (this data will be inquired directly from MIMOD partner country at a later phase), United Kingdom, Denmark

Completeness of components

The questions arises if there are data collection systems that are missing important components and how advanced the components are in terms of efficiency and data quality. Both questions are almost impossible to answer with solely the data gained by the MIMOD survey. But data analysis yielded the following working thesis:

- Countries with a higher degree of component integration in their systems (types 1-4) seem to less likely miss an important domain for data collection.
- The least developed domain in many countries seems to be communications with cases. This domain might be the furthest developed in Finland.

In terms of domain completeness the following types can be differentiated:

C1 All domains fully covered: In one way or the other the following 13 countries have implemented some components for every domain: Austria, Portugal, Sweden, Belgium, The Netherlands, France, Ireland, Norway, Czech Republic, Finland, Latvia, Italy, and Poland.

C2 One or two domains partly or completely missing: The following 6 countries have almost all components in use in their systems, but there are some missing to fully cover 1 or 2 domains: Slovenia (Case management only partly), Lithuania (Quality Assurance only partly), Croatia (is of type C1 for most surveys and of type C3 for surveys EHIS and HTUS), Hungary (Staff management missing in one system, Respondent Communication missing in all their systems), Malta (Survey instrument only partly), Germany (Communication with cases missing).

C3 Most components partly or completely missing: The following 4 countries have missing tools to fully cover most of the data collection domains: Switzerland, Cyprus, Bulgaria, and Romania.

Missing or incomplete data on component completeness: Greece, Luxembourg, Spain, Estonia, United Kingdom, Iceland, Denmark, Slovak Republic.

Usage of commercial/external software tools

The tools in use for the different data collection components can be developed in house by the NSI or can be external tools that are developed and supported by a commercial company. In terms of usage of commercial/external tool the following types can be differentiated:

T1 All tools are in house products: The following 8 countries are using at least one data collection system in which all component tools are in house developed products: Greece, Portugal, Malta, Spain, Estonia, Finland, Latvia, Poland

T2 Some external tools are integrated in the in house developed system: In this type all the components are in house developed but some of them have minor external tools integrated in them. The following 4 countries seem to run such a system: Austria, Sweden, Lithuania, and The Netherlands. It is expected that the follow up telephone interviews will shift some countries from type T1 to type T2.

T3 BLAISE questionnaire supplemented by in house developed tools: In this type, the external questionnaire software BLAISE is used as the main tool for data collection. Tools for other components have been developed in house and are built around the Blaise system. The following 9 countries seem to run such a system: Croatia, Hungary, France, Czech Republic, United Kingdom, Bulgaria, Romania, Iceland, and Slovak Republic. It is expected that the follow up telephone interviews will shift some countries from type T3 to T4.

T4 BLAISE questionnaire supplemented by in house programmed external products: As in type T3, the external questionnaire software BLAISE is used as the main tool for data collection. The difference is that some of the tools for other components - although programmed in house – rely on external software such as SAS, EXCEL or R. The following 7 countries seem to run such a system: Slovenia, Belgium, Germany, Ireland, Norway, Cyprus, and Italy.

Missing or incomplete data on the usage of commercial/external tools: Luxembourg, Switzerland, Denmark

Some countries explicitly named the commercial/external products they have in use in their CMS. The following table lists these products by subdomain:

Table 8: Commercial/external products usage by subdomain

Subdomain	External products in use
Survey instrument	 Blaise (any Version): Slovenia, Belgium, Croatia, Hungary, Malta, Germany; France, Ireland, Norway, Cyprus, Czech Republic, United Kingdom, Bulgaria, Romania, Italy, Iceland, Slovak Republic. ABBYY: Greece,

	 Oracle Apex: Greece, 1ka: Slovenia NADOR: Hungary Voxco: Germany Collectica: Ireland
Access to survey instrument	 Lime Survey: Bulgaria, Romania ARC GIS (geo planning): Lithuania Excel: Ireland SAS: Ireland Critix: Norway
Staff administration	SAP: Norway
Case Workflow	CAMUNDA Workflow: AustriaMS Access: Slovenia
Communication with cases	 R LaTex: Austria TRIO (sending and receiving calls): Sweden Docmosis: Norway Unnamed postal service: Italy
Monitoring and Reporting	 R Shiny: Austria, The Netherlands Excel: Belgium, Ireland, Norway, Cyprus SAS: Belgium, Germany, Ireland, Norway SPSS: The Netherlands

Stop the trend of in house developments! The usage of the commercial/external survey instrument BLAISE in many countries is striking. But there is also a trend away from BLAISE noticeable: If one looks only at those countries that have a newly changed CMS or are already in the practical phase of changing their CMS it becomes clear that already half of them now develop their own survey instrument in house (Austria, Lithuania, Spain, Estonia, Finland, Latvia, Poland). The other half of these countries seem to build their own in house developed domains around the BLAISE survey instrument domain. From a European perspective it seems unreasonable that these many different in house developments take place in terms of input harmonisation and time and money resources. We therefore want to discuss the following working thesis:

- The most efficient way for Europe would be to complete the survey instrument Blaise by joint resources to a full Case Management System by adding the missing components of the domains staff-, case management and quality assurance.
- The most inefficient way is that every country develops their very own domains.
- The middle way would be to build an integrated system of the domains staff-, case management and quality assurance in which an external survey instrument may be plugged in. Maybe marry one of the already developed domains of a system of a NSI type I1 with Blaise.
- Right now it seems that most countries with new CMS have chosen the most inefficient way. We believe Eurostat must stronger support the joint developments of domains in order to stop this trend.

Degree of survey integration

In many countries there is not one single data collection system in use for every social survey. In fact, often there are multiple data collection systems running parallel, some surveys in one system other surveys in another system. In such parallel systems it is still possible that some data collection components are shared between the surveys. For example the questionnaire tool Blaise is used for all surveys, but the tools of the other domains are different between the systems. At the extreme, there is a data collection system for every survey and no tools are shared between these systems.

S1 One single data collection system for all surveys: The following 8 countries seem to have one single system for data collection with which all social surveys are run: Austria, Portugal, Belgium, Lithuania, Czech Republic, Estonia, Latvia, and Poland.

S2 Systems in transition towards S1: In this type there are often many (4-6) parallel systems in use that are currently being replaced or will very soon be replaced by one single system. Some surveys are already integrated in the new systems but others are still run in one of the old systems. Right now the following 5 countries are in this transition process (in parenthesis the number of parallel systems currently in use): The Netherlands (4), Spain (6), Norway (2), Finland (7), and Italy (4).

s3 an own system for certain modes: In this type there are mostly 2 different data collection systems in use, depending on the mode of the surveys. Surveys with the same modes share the same data collection systems. The following 5 countries are using mode specific systems: Slovenia (2), Hungary (2), Malta (3), Germany (2), and Cyprus (2). In most of these countries (Slovenia, Hungary and Germany) there is one system for surveys without CAWI and one system for surveys that use the CAWI mode. In Cyprus there is one system for non CATI mode surveys and one for CATI mode surveys. Only in Malta there is a different data collection system for every data collection mode (CATI, CAPI, and PAPI).

S4 Some systems for certain modes and some for certain surveys: This type can be seen as the combination of S3 and S6. That means that surveys with a certain modes share certain data collection systems but there are also some data collection system especially in use for a specific survey. Common in this type is the fact, that there are 3-4 systems running in parallel. The following 3 countries seem to run this type of parallel systems: Greece (3), Croatia (4), and Ireland (3).

S5 Some systems for internal and some for outsourced surveys: In this type there is at least one system for the internal surveys and at least one system for (partially) outsourced surveys. 3-6 parallel systems are common for this type. The following 3 countries seem to use such system differentiation: Sweden (3), France (3), and Switzerland (6). In Switzerland most of the surveys are outsourced, whereas in Sweden and France the majority of surveys are run internally. For the internal surveys different data collection system are being used, in Sweden of type S3 and in France of type S2.

S3 An own system for each survey: In this type there is a different data collection system for every social survey. That means that there are 6 systems running in parallel. Tools are most probably not shared between the surveys. The following 2 countries seem to have this type of parallel systems: Bulgaria (6), Romania (6)

Missing data: Luxembourg, United Kingdom, Iceland, Denmark, Slovak Republic

Concluding remarks

From these preliminary findings it becomes clear how heterogeneous the Case Management Systems within the ESS are. They differentiate along the following four dimensions: (1) the degree of component integration, (2) the component completeness, (3) the degree of in house developed product usage and (4) the survey integration.

In terms of data collection efficiency, systems with a high degree of component and survey integration would be aspired. That is one single data collection system for all socials surveys (or maybe also the business surveys?) that has integrated its components in a way that information can be transferred automatically and live. As type I3 shows, one single system does not necessarily mean that every component must be an original – specially for this very system developed - product. Integration can also be reached by plugging in external products and developing links between the different products. As countries of type S1 or S2 show, it is even possible to integrate all the different social surveys into a single system. For the final report it should therefore be made possible to in detail contrast systems of type I1+2 v.s. I3 and to show what things are needed in order to integrate all surveys into the system.

In terms of high data quality, the completeness of the Case Management System's components is of uttermost importance. By covering all subdomains and using strong component's features the data collection procedures can be easily adapted to the needs of the cases and the surveys. In the final report it therefore should be made possible to give best practice examples of strong components for each of the following subdomains: survey instruments, access to survey instruments, staff administration, case administration, case workflow, communication with cases and monitoring&reporting.

In terms of input harmonisation between countries and in terms of resource spending in the ESS overall, the degree of in house developed products that cannot be shared with other systems should be kept to a minimum. But as the types I1+I2 show, there seems to be an opposite trend towards more in house development within the ESS. In the final report, possible approaches for a joint development of CMS will be discussed. Could the joint support in the further development of the BLAISE software into a full Case Management System of type I1, C1 and S1 be an efficient approach from an EU perspective?