Making Sense of Sense-Making: The EU's Role in Collecting, Analysing, and Disseminating Information in Times of Crisis

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Abstract

In an era of transboundary crises, Europe faces the daunting challenge of coordinating joint responses in an effective and timely way. Recent transboundary crises such as the Icelandic Ash Cloud (2010), food contamination incidents and the financial breakdown revealed a key part of that challenge: sifting through relevant information, building an accurate picture of what is happening, and communicating that analysis to political decision-makers. Academic researchers refer to this process in terms of 'sense-making'. To create joint capacity for sense-making is one of the prominent elements of the EU's ambitions to play a role in the management of transboundary crises. The number of early-warning, rapid-alert, and common communication platforms in the EU has multiplied in recent years but with little central guidance or overall rationale. This report tries to 'make sense of sense-making' tools in the EU by providing the most comprehensive overview to date. We ask what sense-making tools are available at the EU level, document what they are intended to do, and explore what these tools offer in terms of 'added-value' to European states. Using official documents, secondary literature and interviews with policy officials, this report maps the sense-making landscape of the EU. After drawing out key patterns and offering an inventory of tools relevant to sense-making, we conclude by discussing the problems and prospects of the EU's role.

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Executive Summary

The EU's capacity to manage crises and disasters is rapidly evolving. It took less than three decades to develop modest but promising capacities to assist member states overwhelmed by disaster (Civil Protection Mechanism), to deliver aid to stricken countries outside the EU (DG ECHO), and to send civil-military missions to troubled areas around the world (Common Security and Defence Policy).

One aspect of EU crisis management capacity cutting through all these initiatives is what we call 'sense-making'. Sense-making is both incredibly hard and essential to the management of so-called transboundary crises (crises that cross geographic and policy boundaries). European policymakers in different institutions are experimenting with ways to improve this situation. They are building new means for collecting, analysing, and disseminating data to create an integrated picture of a crisis situation. Many Commission DGs, the EEAS, and EU agencies have assembled – or are in the process of building – systems for crisis information management.

Academic research has not kept abreast with the growing sense-making capacity in the EU. This research report aims to bridge that gap. We are interested in learning what information is collected, by whom, and how it is made available to EU policymakers to help detect and understand unfolding crises. This report maps and categorizes the sense-making tools across the EU's institutions and agencies. This report will not only illuminate the sense-making landscape in Brussels, but it will help Swedish policymakers to connect effectively with that landscape and offer suggestions for improvement.

To identify the sense-making capacities of the EU, we searched for any management tool that could be used to gather, analyse and/or disseminate information relevant to sustaining vital societal functions and securing the population's life, health, needs and basic values during crises and disasters. The result was 84 systems that fit both our system definition and our crisis definition.

We found a variety of systems related to sense-making, variously called 'early-warning', 'rapid-alert' or 'communication systems'. They vary in terms of their functions. All systems collect information and all systems disseminate information. Analysing information takes place in two thirds of the systems studied. This means that the system allows EU officials to provide additional 'value added' to the information uploaded by member states. This 'value adding' takes various forms, and can include simply adding European-level information or conducting a more involved 'situation report' based on uploads. Few systems, however, actively synthesize, repackage, or build full-scale situation assessments based on raw data uploaded from users.

Introduction[1]

The EU's capacity to manage crises and disasters is rapidly evolving. It took less than three decades to develop modest but promising capacities to assist member states overwhelmed by disaster (Civil Protection Mechanism), to deliver aid to stricken countries outside the EU (DG ECHO), and to send civil-military missions to troubled areas around the world (Common Security and Defence Policy). We have documented the long and winding policy roads that led to this emergent capacity (Boin, Ekengren and Rhinard 2013).

Now, with the Lisbon Treaty in effect, new legal bases have been created and new policy initiatives have been set in motion. The Council's Crisis Coordination Arrangements are being revamped into the Integrated Political Crisis Response (ICPR) system, while the Solidarity Clause is being translated into guidelines for member states. The Civil Protection Mechanism has been 'recast', DG ECHO's European Response Coordination Centre activated, and the European External Action Service (EEAS) is assuming an increasingly active role in the domain of external crisis coordination and consular protection.

One aspect of EU crisis management capacity cutting through all these initiatives is what we call 'sense-making' (Boin et al. 2005; Weick 1995). Sense-making is both incredibly hard and essential to the management of so-called transboundary crises (crises that cross geographic and policy boundaries). The Icelandic Ash Crisis (2010), for instance, revealed the difficulties of gaining crucial information on the causes, dynamics, effects and potential solutions to such a transboundary event. Available information was distributed across multiple jurisdictions and policy sectors, fragmented across public and private organizations, and ridden by concerns about accuracy. It consequently took a long time before the involved member states arrived at a shared picture of the situation.

Agostino Miozzo, the crisis director at EEAS, has remarked that 'we must avoid the over-flow of information. Over-flow means paralysis; it means that we are unable to proceed, to work and to react. We need precise, clear and

1 The authors would like to express their heartfelt gratitude to the researchers who helped with the empirical components of this report and prepared the individual case studies. Special thanks go to Ylva Pettersson, who steered the data collection for the inventory, produced the tables, did the research for the CoOL and EWRS case studies, and guided the final report to completion. We are also grateful to Mette Bakken, who helped to build the framework of analysis for studying sense-making and Lavinia Cadar, who contributed to the empirical inventory and was responsible for the ISAA case study. Last but not least we thank Monica Svantesson, who wrote the EUROSUR case study. Their assistance was invaluable and improved the quality of this report, although any errors remain the responsibility of the authors alone.

reliable information from different sources' (Miozzo 2012). Timo Härkönen of the Finnish Prime Minister's Office notes, 'the traditional, sector-based analysis mechanism is no longer capable of providing adequate information for decision-makers at the highest levels of state leadership' (Härkönen 2012).

European policymakers in different institutions are experimenting with ways to improve this situation. They are building new means for collecting, analysing, and disseminating data to create an integrated picture of a crisis situation. Many Commission DGs, the EEAS, and EU agencies have assembled – or are in the process of building – systems for crisis information management.

In this report, we define a sense-making system as any information-management tool that gathers, analyses and/or disseminates information relevant to sustaining vital societal functions and securing the population's life, health, needs and basic values under extraordinary events known as crises (we further specify our definition of crisis below). This instrument may be a software tool, a method, or a venue.

Academic research has not kept abreast with the growing sense-making capacity in the EU. This research report aims to bridge that gap. We are interested in learning what information is collected, by whom, and how it is made available to EU policymakers to help detect and understand unfolding crises. This report maps and categorizes the sense-making tools across the EU's institutions and agencies. We complement our 'horizontal' assessment of systems across the institutions with a 'vertical' analysis of a small set of systems, namely: DG Sanco's Early Warning and Response System (EWRS), the EEAS's Consular On-Line Website (CoOL), Frontex's European Border Surveillance System (EUROSUR), and the Council's Integrated Political Crisis Response Web Platform (IPCR Web Platform).

We found a wide array of sense-making systems, variously called early warning, rapid alert, communication platforms, or situational awareness networks. Their development and adoption has not been centrally guided, their functions differ, and most are sectorally focused – all this resulting in a complex network that is confusing to anyone seeking an overall grasp. Some systems seem to be working well in areas with significant member state commitment, while in others areas there is a gap between EU requests and member state participation. Since most systems rely on member state input, the quality of inputs affects the utility of outputs. The amount of actual analysis taking place within these systems varies (two thirds of them provide some kind of analysis), since many have not been authorised to do so. In a small number of actual crises, these systems were used for other purposes than sense-making such as policy coordination tools.

Studying Sense-Making in the EU: An Analytical Framework

This section explains why sense-making is important to managing transboundary crises. It also explains why sense-making is difficult. It sketches out the method and framework we used to collect our data on EU sense-making systems.[2]

Crisis management and the sense-making challenge

A crisis poses extraordinary challenges to government organizations (Rosenthal et al. 1989; 2001). The combination of urgent threat and deep uncertainty demands a response that bureaucracies are often not properly prepared to deliver; public organizations find it hard to respond to crises in a timely and effective manner.

At the strategic level of government, we can discern a set of critical tasks that senior policymakers and politicians are expected to fulfil during a crisis (Boin et al. 2005; 2013). They have to coordinate complex networks and make critical decisions; they must communicate with the public and other stakeholders; and they must account for their actions, preserving governmental legitimacy. But an effective fulfilment of these tasks requires one other and critical task: sense-making.

We define sense-making here in terms of collecting, analysing and sharing information on the causes, dynamics and effects of the crisis and its potential solution (cf. Weick 1995). It is an essential task: if done well, it provides decision-makers with a *shared perception of what is happening*. All too often, it appears that decision-makers have different mental pictures of the crisis situation, which can and do lead to confusion, misunderstandings, irritation and, ultimately, misguided decisions. Effective sense-making should be viewed as a condition for effective crisis management.

Sense-making may also be one of the hardest challenges that crisis managers face. In the literature, we find at least three types of explanation for the limited sense-making capacity that we so often witness during a crisis. First, psychologists have shown that most people find it very hard to correctly process information when they experience high levels of stress (Kahneman 2011). Second, the difficulties of information processing under stress can easily be amplified by certain group processes, which typically emerge when a group must act under

2 The questions guiding the mapping and case studies can be found in Annex III.

time pressure (Vertzberger 1989; 't Hart, Stern and Sundelius 1997). Third, the processing of information can be hindered or even undermined by existing tensions that play up between organizational units (Turner 1978; Rosenthal, 't Hart and Kouzmin 1991; Preston and 't Hart 1999).

One only has to read the official reports on the response to Hurricane Katrina and the subsequent flooding of New Orleans (in the summer of 2005) to find telling illustrations of the findings summarized above (Brinkley 2006; Cooper and Block 2006). The most essential information about breaking levees and the location of survivors took an incredibly long time to reach the strategic level (if it ever did reach that level). Academic research strongly suggests that this is a normal occurrence, especially if the organization of sense-making is not properly prepared.

The sense-making challenge is only becoming more difficult, for at least two reasons. First, there is the proliferation of social media use, which creates an entire new layer in which critical information circulates (but remains well hidden in the 'noise' explosion that immediately follows – some say defines – a crisis). Policymakers and politicians find this new dimension of crisis extremely challenging. Second, the causes and consequences of crises increasingly play out across all types of boundaries (organizational, cultural, geographical, functional etc.). As the transboundary dimensions of crises become ever more prevalent, the challenges to make sense of such transboundary events rise as well (Ansell, Boin and Keller 2010). A spate of recent events – ranging from natural disasters to the financial meltdown, from cyber-attacks to ash clouds – has illustrated just how hard it is to meet these challenges.

If we want to study how public organizations prepare for and fill in this sense-making task, it helps to break down sense-making in its constituents parts. A critical distinction we must make from the outset is between *detection* and *understanding*.

Detection pertains to the recognition that a crisis has begun. Sometimes that is self-evident: an earthquake or tsunami is usually immediately and widely noticed. But, as a general rule, we know that the starting point of a crisis is much easier to pinpoint *after* a crisis, with hindsight knowledge, than *during* a crisis. In fact, the dimensions of some 'evident' disasters such as Hurricane Katrina did not become fully clear until days after the disaster began to unfold. As soon as a crisis is detected, early-warning systems can be activated (early warning systems thus depend on the capacity to detect crises).

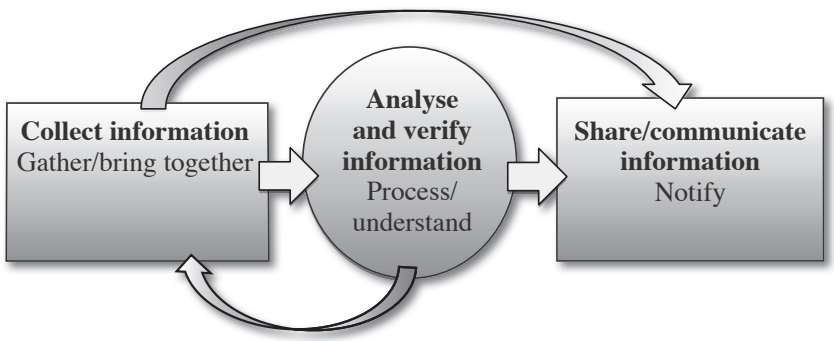
Understanding a crisis pertains to the causes, dynamics, and consequences of an unfolding crisis. Again, what happens during a crisis may appear painfully obvious in hindsight. It is, however, rarely anywhere near evident in the midst of crisis. Policymakers typically find themselves confronted with an overload of seemingly useless information and a dearth of needed information. What

may be clear at the operational level may be understood very differently at the strategic level.

To detect and understand unfolding crises, three inter-related processes are necessary:

1. Collecting information: defining what information is needed and gathering or requesting it;
2. Analysing information: piecing together information from various sources, validating it, and creating a 'complete' picture of a situation. This includes verification of information, and checking whether the emerging picture of the situation remains accurate in light of shifting developments and incoming data. Analysis represents sense-making at its core;
3. Sharing information: communicating the emerging picture of the situation with internal and external partners, while specifying what is known for sure and what is merely suspected.[3]

Figure 1: Illustration of the process of sense-making



As we will see below, some sense-making processes may only include collection and sharing of information, without any analytical input. The collection of information is, of course, a prerequisite for the sense-making process. But gathering information is only part of the sense-making process: it may be enough to detect a crisis, but analysis is needed to understand one.

In practice, a variety of methods and tools are used to collect, analyse, check and communicate information on emerging and unfolding crises. In Table 1, we depict the outlines of the 'sense-making map'.

3 Partners are typically located at various levels (international, regional, national) and may include the public at large as well as private sector organizations.

Table 1: Outlines of a conceptual sense-making map

	Collect	Analyse and verify	Share/communicate
Detection	*To gather and check information relating to the recognition of emerging risks*	*To develop an understanding of an emerging crises*	*To distribute information – could be divided into the sharing/communication of unprocessed vs processed information*
	Example I: EU collect national risk assessments (for known unknowns) **Example II:** Collection of statistics/big data (for unknown unknowns)	**Example I:** Establishment of a cross-sectoral EU overview of natural and man-made disasters in the EU area **Example II:** Statistical processing of 'big data', social media analysis, crowd mapping etc.	**Example I:** EU-wide cross-sectoral analysis is disseminated to member states (processed) **Example II:** Sharing of big data to member states (unprocessed)
Understanding	*To gather information related to an unfolding crisis*	*To piece together information from various sources to come up with a 'consolidated' picture of an unfolding crisis*	*To distribute information related to ongoing crisis events*
	Example I: Response requests feed into ERCC **Example II:** The deployment of and collection of information produced by ERCC assessment teams	**Example I:** DG ECHO ERCC processing and piecing of information from various sources (other EU institutions/agencies, national authorities, international organisations, on-site reports, continuous updates, statistical data etc.) during an ongoing crisis	**Example I:** ERCC requests are forwarded to member states (unprocessed) **Example II:** ERCC distributes situation reports to other EU institutions/units and/or member states etc. (processed)

Note: Examples are hypothetical.

Our Methods

To identify the sense-making capacities of the EU, we searched for any management tool that could be used to gather, analyse and/or disseminate information relevant to sustaining vital societal functions and securing the population's life, health, needs and basic values during crises and disasters. This definition includes systems as diverse as drought surveillance, epidemic monitoring, and consular crisis cooperation.

Our premise is that information useful for making sense of an impending crisis could come from any number of systems, or a combination of several; thus, we cast our empirical net wide. We used internet-based sources (descriptions of each system, however brief, can usually be found on the Web), official documents, public records requests, phone calls, emails, and face-to-face interviews to assemble the inventory. We searched across the Commission's many Directorates-General, agencies, the Council Secretariat-General, the European External Action Service, and the European Parliament. We were assisted by an initial familiarity with some of these systems, derived through a previous research project on the topic (Boin, Ekengren and Rhinard 2006). We also turned to the scant amount of secondary literature available (Olsson 2009).

Our initial collection of systems that fit our criteria yielded almost 100 systems, but a further cull was made after discovering that some systems only registered past events (e.g. accidents involving dangerous substances) or were empty communication platforms (e.g. a radio communication system). The result was 84 systems that fit both our system definition and our crisis definition.

We should note here that we included 'crisis rooms' and groups of crisis-related experts as information-management systems, where data can be drawn together, analysed and passed on to decision-makers. We also included systems that are under development or undergoing revision, as long as they appeared close enough to completion that we could gather reliable information about their intended and eventual use. Because of the EU focused nature of study, we excluded systems in other regional and international organisations (e.g. NATO, WHO, UN) which also provide member states with crisis-related information and in some cases interact with EU systems (e.g. as additional sources of information).

Next, we scored each system in the following way (a complete table can be found in the Annexes, along with a brief description of each system):

Tool	Gather	Analyse	Share
Name of System, Owner of system	Yes/No	Yes/No	Yes/No

Gathering was scored if information was somehow collected via the system, either automatically or manually. Such information could include news sources, other organisations' information feeds, national ministry uploads, EU agency advisories, or satellite image data, to name just a few examples.

The *analysis* box was checked if the system processes the gathered information in some way, meaning that a product emerges that is qualitatively unique from the sum of the inputs. Analysis was difficult to assess since it can be so nuanced: a Commission official organising member states' inputs into special folders is – to a small extent – deciding what is legitimate and valid as information categories. We opted to measure analysis in terms of a clear 'new product' that emerges as a result of not just sorting the data but examining and making a judgement about it. This also allows us to get a grip on the 'value-added' question of EU involvement in sense-making.

Sharing was judged to have taken place if the entered information, or the resulting analysis, was in some way presented or made available either to the system's users, decision makers higher up the organisational hierarchy, or to the general public.

Out of the 84 systems, we selected four to be examined further and more thoroughly. They were chosen on the basis of their topical diversity – they cover very different kinds of potential crises – along with variation in the extent to which they provide an analysis function. The IPCR Web Platform represents a cross-sectoral and cross-institution initiative in which different information sources and analysis functions can plug in, to facilitate a more holistic perspective of the event. The CoOL system is primarily focused on external crises with consular implications; it gathers and shares information provided by national, EU and international sources. EUROSUR is focused on border crises, and includes analysis and dissemination, but is less dependent on outside inputs. EWRS is a system concerned with collecting national health risk information and feeding it into ECDC (the EU agency for disease protection and control) for analysis and dissemination as situation reports.

Each case study provides information on the system's characteristics, coverage, activation, access, purpose, users and methods. Before we describe these systems, however, we start with the general observed patterns.

Key Inventory Patterns

Our complete inventory is found Annex I. This section outlines the general patterns that emerge from that inventory.

- The first pattern reflects the sheer diversity of the systems. They cover a wide variety of policy fields ranging from civil protection, health, maritime surveillance and border management to nuclear security, external threats, intra-EU coordination, critical infrastructure and law enforcement.
- Certain policy areas have more systems than others. Health, civil protection and border management/maritime surveillance have the highest number of systems within their particular sectors (more than 10 each), while external security has 7, law enforcement has 4, geospatial information has 4, critical infrastructure has 3 systems, nuclear security has 3, and all other policy areas generally have 1 or 2. There are 3 systems focused on intra-EU coordination and communication on crises.
- Sense-making systems are a moving target. New systems are being developed while others are merging. The trend to merge tools is most apparent in the health threats area, where plans are underway to consolidate several tools into the EWRS system (described below). Similarly, the maritime surveillance area will integrate national maritime surveillance tools into one system.
- Most systems are intended for, and used by, actors within a defined policy field. Yet, we have noticed efforts to enhance inter-sectoral communication, making information from one sector available to other sectors. Argus is the Commission's internal intra-institutional communication tool, where information from one rapid alert system is fed to all other systems. This is done manually by the Commissions Secretariat General. Instigated at the same time as the Commission's Argus (2006), the Council Secretariat's Integrated Political Crisis Response arrangements (IPCR, previously called the Crisis Coordination Arrangements), aim at improving an EU-wide response to crises, especially in terms of political coordination during major emergencies. If a major emergency is declared, a common Integrated Situational Awareness and Analysis will be produced jointly by the Commission and the External Action Service (EEAS), thereby contributing to an inter-sectoral and intra-member state coherence.

- All systems can be used to gather and verify information. The gathering is partly done through reporting from the national participants. It can be on a voluntary basis, (e.g. consular protection) or be mandatory and based on legal obligations to share information (e.g. health threats). Gathering can also be done through automatic retrieval of information, through computer programs that scan the internet or open sources for information, or by automatic reports by national institutions and other relevant actors, such as on weather forecasts and radiological measurements. The Joint Research Centre (JRC) of the EU Commission has developed a number of the programs that 'crawl' the internet, including the European Media Monitoring and the Global Disaster Alert and Coordination System (Gdacs). Other systems, such as CleanSeaNet and Copernicus, gather information from European and/or national satellites for maritime or border surveillance. Still other systems like the EU Satellite Centre request national and commercial satellites images, in order to assist situation awareness in external security situations.
- While almost all systems collect and share information in some way, not all provide analysis as an intermediary function. In total, two thirds of the systems can perform analysis, which is typically but not always done in one of the 'situation rooms', the emergency centres located in several Commission Directorate Generals and agencies, and in systems connected to these. Situation rooms with a monitoring function are found in the EEAS, DG HOME, DG ECHO, DG SANCO, Europol, Frontex, ECDC, European Global Satellite Navigation System Agency, the Maritime Analysis and Operations Centre and in the European Maritime Safety Agency, EMSA.
- Analysis can be performed in a variety of ways. Some software programs used in the sense-making systems provide some sort of automated analysis function, while forecasting models and risk assessment techniques are applied to data in some system. More familiar, but not more common, is the human analysis method in which a group mulls over the available information. Importantly, some analysis is not done at the EU level but rather is conducted previously (in member states, or via other international organisations) and uploaded to an EU system. Thus the dividing line between 'pure' information and pre-analysed data can be thin.
- Systems can be divided between those focused on the acute crisis mode (e.g. EWRS or CECIS, concerning civil protection) and those that involve longer-term reflection and discussion (the Radicalization Awareness Network and the Critical Infrastructure Warning Information Network).

In the latter, discussion often focuses on what measures are being taken to prevent future disturbances and events. That is not to say such systems cannot be used in an acute crisis mode, however. Experience shows, as we discuss below, that systems not expressly designed for sense-making in a crisis might eventually be used to do so.

- Few of the systems were designed to provide the full-range of sense-making functions (as we defined them). Some officials interviewed for this report argued that the 'mere' sharing of information is sufficient for sense-making in a crisis since it offers information about what the 28 EU member states are doing. The CoOL system, as an example, is designed to alert governments of one anothers' actions, allowing individual states to take action as they deem appropriate. Here is where the question of legal competence intervenes: in policy areas where national action without coordination is contrary to EU law (e.g. animal diseases or, more recently, some banking crisis actions), EU sense-making systems are more likely to have their own analysis function.
- Distribution of collected information and/or analysis is often done via automatic email alerts that are typically generated when new information is uploaded in the system. A few systems that rely on human communication, such as Argus, are closed networks for nominated experts only, whereas others are open even to the public, like the systems monitoring weather and natural hazards.
- We found that a little more than half of the systems are completely or partially dependent on input from the member states. Others rely on information gathering techniques designed at the EU level, such as news monitoring or weather forecasting. There is no common pattern to the predominance of quantitative or qualitative data forms. Further, independent analysis of information by EU level officials is fairly rare; most officials however would argue that their 'analysis' is done in cooperation with national and international officials.

In conclusion, we found that all the systems gather information, two thirds of them provide analysis, and all systems share their findings somehow. The others function as a forum for sharing national information or gather their own information. They cover a wide array of policy fields, and several systems are being developed or expanded at the moment. There is also a trend to reduce the number of systems and use the existing ones for broader scopes/more actors.

Four Case Studies

In addition to our mapping of tools relevant to sense-making, we also selected four sense-making tools to study up close. These studies offer empirical depth and allow us to see how these systems work in practice. Each study is organized in similar terms: an overview, a signature case, and a brief analysis. Data was gathered on a similar set of questions about each sense-making system using written material (official documents and secondary literature), web page information, and semi-structured interviews. Interview questions are presented in Annex III of this report.

Case study 1: Integrated Political Crisis Response (IPCR Web Platform)

Tool	Gather	Analyse	Share
IPCR Web Platform	Yes	Yes	Yes

The Integrated Political Crisis Response (IPCR) is the successor to the former Crisis Coordination Arrangements (CCA), a set of protocols and procedures for political crisis decision-making at the EU level. The CCA included information support systems and a committee of advisors for helping decision-makers process information. While the CCA was based in the Council, it was intended to offer modular 'plug in' capacity for Commission systems and actors. Eventually, the CCA was judged too elaborate and was never put in full operation.

A decision to reform the CCA was made in December 2010 when a Friends of the Presidency (FoP) working group was created and assigned by COREPER to make use of the lessons learned from both exercises and real-life crises to assess whether the CCA was still an appropriate tool for responding to crisis situations (Council of the European Union 2010a). Not only had the CCA proved too elaborate, but the post-Lisbon institutional changes required a reassessment of the institutional home and role of the CCA. The FoP group eventually concluded, one year later, that 'the CCA are not, in their current configuration, the politically and strategically agile tool required by the EU as a whole to respond quickly and adequately to a serious crisis situation' (Council of the European Union 2011a: 6). The institutional implications of the Lisbon Treaty were addressed, recommended changes were put into place, and in June 2013 the name of the CCA was changed to the 'EU Integrated Political Crisis Response (IPCR) arrangements'.

The initial creation of the CCA reflected an acknowledgement by EU leaders that some crises and emergencies are of such significance that political coordination is required. There were no such structures at the time; the CCA were intended to fill the gap. The IPCR follows the same vein of thinking but sought to 'lighten' the decision-making infrastructure that defined the CCA. They have been made 'flexible and scalable', thus facilitating a custom-made political response informed and assisted by the support of EU institutions and services in relation to the crisis at hand (European Union 2013). The discussion below reviews the IPCR generally but focuses on one of its main sub-components: the IPCR 'Web Platform' that connects member states and EU institutions, and where information and analyses, such as the Integrated Situation Awareness and Assessment (ISAA) reports will be accessible.

Overview

The rotating Presidency of the Council is responsible for ensuring political control and providing strategic direction throughout the whole IPCR process. Any member state is entitled to request the Presidency to activate the IPCR. When one or more member states identify a crisis situation as potentially harmful to the broader EU, they inform the Presidency, who weights the concerns of the respective member states using advice from the General Secretariat of the Council (GSC), the Commission and the European External Action Service (EEAS), and if requested, with the expertise of relevant EU agencies or other member states. The Presidency can then gather an informal roundtable with the help of the GSC. The Commission and the EEAS make use of their areas of competence and advise the Presidency. If considered appropriate, the EU Counter Terrorism Coordinator (CTC) and other relevant stakeholders and experts are invited to participate. The office of the President of the European Council is fully involved. In this setting and under the leadership of the Presidency, proposals for action are discussed and adopted.

The decision-making process is supported by the ISAA, a reporting system developed by the Commission and EEAS (within their remits) but combining information from EU agencies and member states. The Presidency is entitled to request ISAA support, the capability of which consists of collection, sharing and processing of information related to current situations, as well as producing integrated analyses with regard to their possible evolution and consequences. The ISAA, while still finding its feet, is one of the more ambitious and overarching information management systems initiated in the EU.

The ISAA is uploaded to the ICPR's Web Platform, the electronic hub serving EU leaders and used for distribution and exchange of information relevant for political decision making at the EU level during crises. The web

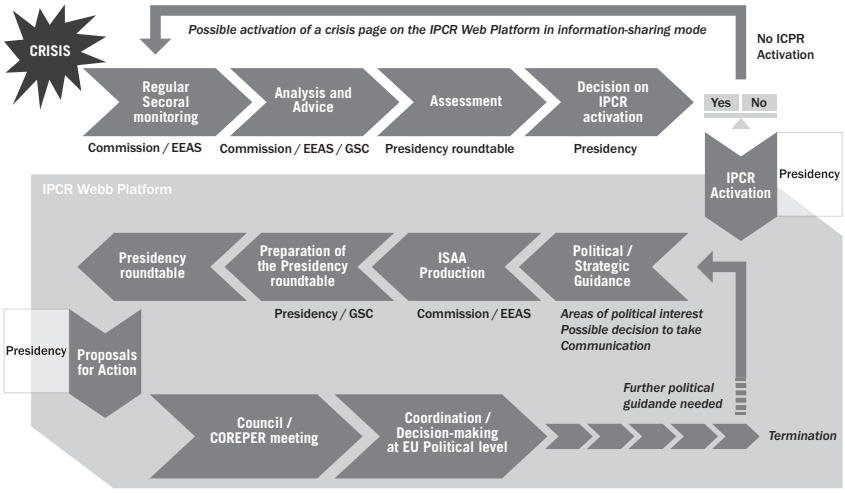
platform does not replace existing sectoral tools; it aims, however, to integrate them into a common assessment picture (Council of the EU 2013). Owned by the Council and technically managed by the GSC with support from the Commission and the EEAS, the web platform is permanently available at both member-state and EU level, and fed with input from member states' relevant institutions (e.g. ministries or national crisis centres), the Commission, the EEAS and EU agencies (Interview 1, 2013).

Outside crisis times, the IPCR web platform is used for background information or routine issues (such as updating lists of points of contact, documents, or information about events) and for its different thematic forums (e.g. on preparedness), thus enabling networking, information exchange, collaboration, and 'virtual' meetings (Council of the EU 2013; Interview 1, 2013).

In times of crisis, the IPCR web platform features the possibility to generate one or more crisis pages for exchanging specific information when the IPCR arrangements are activated in full. When activated only in 'information-sharing' mode, a crisis page is generated, but not yet with the idea to have political coordination and decision-making at Coreper/Council level. In other words, the 'information-sharing' mode does not fully activate the IPCR. The crisis page contributes to the general objective of the IPCR arrangements, namely to allow a rapid coordination and decision-making process at the EU political level. As such, it provides a common snapshot of the situation in view of Coreper/Council meetings (with ISAA reports prepared mostly by the Commission and the EEAS), allows member states to contribute with specific situational awareness and analysis information (validated at national level), and constitutes a hub for practical information regarding, for instance, the time and venue of a meeting (Interview 1, 2013).

With regard to deactivating the IPCR, the procedure is similar to the one of activation. The Presidency takes the decision, in consultation with the affected member states and those expressing concerns (Council of the European Union 2013).

Figure 2: The IPCR process



Source: Adapted from Council of the European Union 2013: 15

Signature Case

The IPCR cannot be analysed empirically since it has not been triggered in an actual crisis. In lieu of a 'signature case', we thus turn to its predecessor, the CCA, in order to get an understanding of how it may work.

Particularly after the 9/11 terrorist attacks, the EU became aware of the fact that it lacked a formal procedure, besides the normal legislative process, for joining its leadership with national political representatives so as to deliver a coordinated response to major crises. The Hague Programme was one of the few explicit documents to call for an integrated EU arrangement for managing transboundary crises (Boin, Ekengren and Rhinard 2013). The Justice and Home Affairs Council declaration on the EU response to the London bombings reemphasized this need, calling for the development of 'arrangements to share information, ensure coordination and enable collective decision-making in an emergency, particularly for terrorist attacks on more than one Member State' (Council of the EU 2005: 1). After the 2004 bombings in Madrid and the 2005 bombings in London, as well as the 2004 disasters in the Pacific and Indian Ocean, the Council formally agreed to the creation of the Crisis Coordination Arrangements in 2006, albeit not all the details were entirely in place concerning how the members states and the EU institutions would cooperate on a political level in Brussels in times of crisis (Larsson 2009).

A member state considering itself overwhelmed by the prospects of an emergency or crisis situation would evaluate whether political coordination at the

EU level was needed or not. If not, it could elect to inform the appropriate sectoral Rapid Alert System (RAS) within the Commission. If wishing to activate the CCA, a member state would alert the Council Secretariat's Joint Situation Centre (SitCen, today renamed IntCen and part of the EEAS), whose director notified the Council Presidency, the office of the Secretary-General of the Council, and the Commission. The decision to activate the CCA thus rested in the hands of the Presidency, but was taken in consultation with the member states directly affected and based on expert advice.

Once activated, the CCA required the convening of the Crisis Steering Group, composed of the Council Presidency, the Permanent Representatives of the affected member states, the Deputy Secretary-General of the Council, and the Secretary-General of the Commission, each of them entitled to a limited number of support staff. Under the supervision of the EU's main diplomatic body, COREPER, the Crisis Steering Group was assigned the following purpose:

> To assess the situation and take an initial view on the EU's response; ensure a common understanding of the situation is shared; offer advice to Member States on collective action; develop options for COREPER and the Council; ensure appropriate follow-up; act as a channel through which Member States may communicate needs not covered by existing arrangements; and ensuring that a common communications strategy is deployed with regard to the media (Council of the EU 2007: 10).

Depending on the particular circumstances of each emergency, the ad hoc Support Group brought together the affected member states, the Council Secretariat, the Commission, the Presidency and other technical experts, making use of the SitCen and the relevant Rapid Alert Systems of the Commission.

The CCA mechanism was exercised every year. The exercise in 2010 served as a prompt to re-evaluate the CCA, including its information and communication systems. The crisis scenario simulated a bioterrorist attack during a European football championship organized by Poland and Ukraine (European Union 2010). The information exchange between the Presidency, directly affected member states, Council Secretariat and the Commission, using a combination of SMS, e-mail and the CCA website, was evaluated as generally adequate, even though not all the member states had received all e-mail and SMS messages. Moreover, it was noticed that not all member states had used the Situation Report form on the CCA website, but their own preferred formats, a situation that, according to the Council, had to be remedied in favour of a fixed template, facilitating an EU-wide situation overview. The information portal used at that time, called the CCA website, was considered a critical hub – but the Council's own review of the website suggested that 'serious work is needed

to make it more usable and user-friendly' (Council of the European Union 2010b: 2). During the exercise, multiple web portals were in use (including the Commission's ARGUS and its public EUROPA site), a combination that proved 'too cumbersome and time-consuming' (Council of the European Union 2010b: 10). Participants' preference for the CCA webpage led to the conclusion that there should be a way of integrating relevant news from other websites into the CCA webpage. Improvements for an easier navigation and a better overview were also requested. These requests led to a workshop in Brussels on 17 November 2010, in which special attention was paid to the CCA website and its refinement (Council of the European Union 2010c) – a process that would eventually lead to the IPCR web portal.

In the CCA Standard Operating Procedures manual of 2011, it is stated that the activation of the CCA webpage could be enacted by the SitCen in any of the three modes of coordination, namely awareness, alert, and emergency. The webpage was meant as a single shared platform for prompt information exchange, situation overview and assessments, important announcements, selected media inputs, as well as informal discussions about possible policy actions, etc. (Council of the European Union 2011b). To this end, member states which have permanent full access to the CCA website and the other core users with full access (the GSC, SitCen, other relevant departments of the EEAS, and the Commission) were strongly encouraged to use the website for information sharing. Other users could be given access by the core users, providing them reading access to the webpage or the possibility to contribute to the assessment of a situation through the Information Sharing Forum (Council of the European Union 2011b).

The CCA was never fully activated, but was put on 'alert mode' three times (e.g. used for information sharing purposes only): the Mumbai terrorist attack in 2008, in the aftermath of the earthquake in Haiti in January 2010, and following the volcano eruption in Iceland in April 2010. Even though important to the study of IPCR, evidence about how the CCA website – the predecessor of the IPCR web platform – functioned in those cases is confidential and will not be disclosed by EU officials.

The information management system of the CCA has been totally reshaped. The IPCR web platform incorporates a distinction between managing authorities and validating authorities. The former, either at member-state or EU level, enjoy extensive administrative privileges on the web platform and are responsible for managing their own community of users (in layman's terms, they might be called 'forum managers'). The latter are allowed to post information on specific modules of the crisis page. Their inputs are thus considered valid and authoritative in their domain, at either the national or EU level (Interview 1, 2013).

Analysis

The CCA and its successor, the ICPR, provide a clear illustration of the EU's ambitions and the constraints operating on them. The ICPR is a bold experiment in putting the EU on a 'crisis footing' when necessary, and doing so at the political level. Most systems operate at the sectoral level, or within the Commission, but only the ICPR is built within the Council – thus tapping into the political force and legitimacy conferred directly by member states. It is a clear sign that member states do not see crisis management only as a technocratic, sectoral endeavour; rather, crisis management is political and requires member state governments' engagement at the highest level.

However, the ICPR, while carrying political backing, lacks practical resources. It relies on information gathered and collected via Commission systems, and the Commission is not always ready to engage fully when it feels that its systems suffice to provide the functions being developed independently by the Council. The ICPR also relies on information provided by national agencies and authorities, who may or may not be coordinated with their national political representatives in Brussels. The ICPR has some degree of open-source intelligence analysis capacity (via the IntCen) but only when available and relevant for a particular crisis. In short, the ICPR is hampered by both resource shortages and institutional politics.

Case Study 2: Consular On-Line Website (CoOL)

Tool	Gather	Analyse	Share
Consular On-line Website	Yes	No	Yes

The CoOL website is used to facilitate consular cooperation in foreign crisis areas.[4] It provides a forum in which national civil servants charged with consular protection of their citizens can exchange information and, when desirable, coordinate actions during crises.

The uprising in Libya in February 2011 was a crisis during which CoOL was activated. Several thousands of Europeans got caught in the hostilities, and wanted to leave the country. Since some member states did not have an embassy there, and since operational capacities for evacuation varied greatly amongst them, officials in the foreign ministries of EU member states turned to the 'Consular On-Line Website' (CoOL) to gather information and seek answers from other states. CoOL was just one of many information sharing and communication systems in place (including the EU's secure diplomatic communi-

4 https://cool.eeas.europa.eu

cation lines and traditional communication means). Moreover, it contributed little of its 'own analysis' according to our definition, but it seemed to play an important role as a platform for information sharing and coordination.

The case study below delves into the operation of CoOL in more depth, beginning with an overview and then showing its actual functioning during the Libya crisis. We conclude with an analysis of CoOL against the backdrop of the analytical framework of our study.

Overview

CoOL is meant as a hub for information exchange and cooperation on consular issues during normal periods and during crises. It was created in 2008 by the Consular Crisis Management (CCM) Division of the Situation Centre in the Council Secretariat, which was relocated to the European External Action Services (EEAS) in 2012. The day-to-day operation of the website is administered by the CCM Division, which assists the Presidency in coordinating consular policies and assists the Presidency/lead state in coordinating actions in times of crisis. Lead states are defined as those that 'endeavour to ensure that all European Union citizens are assisted and will coordinate between Member States on the ground' (European Union 2008/C317/06; Interview 2, 2013; EEAS: Consular).

Consular cooperation in the EU builds inter alia on Article 23 of the Lisbon Treaty (TFEU), stating that:

> Every citizen of the Union shall, in the territory of a third country in which the Member State of which he is a national is not represented, be entitled to protection by the consular and diplomatic authorities of any Member State, on the same conditions as the national of that state (Lisbon Treaty Article 23).

The core users of CoOL are staff from the consular units of EU member states, usually located in the ministries of foreign affairs, but they can also include member states' missions to third countries and, of course, the CCM division of the EEAS. In addition to EU member states, access has been given to officials of 'like-minded' countries such as the USA, Switzerland, Norway, Canada and Australia. Guidelines on how to use CoOL are available in the 'Consular On-Line User Manual'. The website has restricted access and requires a login and password assigned by the CCM division of the EEAS.

The stated purpose of the website is to share information and to support coordination in response to crises anywhere in the world where European citizens might need consular or diplomatic assistance. The website is used as a discussion forum and to share travel advice and contact information by the ministries of foreign affairs, crisis centres and consular divisions. There are no

legal obligations to share information as consular issues are a national competence.[5] During a crisis, information on the number of nationals who are in the affected area is shared and updated, as well as changes in national travel advisory and other information that is relevant to the member states. The functionality of the website will be elaborated below when we look into its utility during the evacuation from Libya in 2011.

Information is gathered, usually responding to a manifest crisis or to indications of an emerging crisis. The request for information can be initiated by the CCM administrators or by any user who starts a new thread in the discussion forum or in a dedicated 'focus area'. Other users then provide their national information as far as possible and available. The inputs can be put into tables and complemented with maps, for instance. Every new update is notified to all users of the website through an email alert. Information is uploaded directly by the users, and thereby available to all others. The functioning of the system is reliant on the participants to share information, as there are no obligations to do so, and no automatic means of information gathering. CoOL is thus mainly an information gathering and sharing tool. It does not add any EU analysis.

The functionalities of the website are considerable. The website can help to prepare for and to respond to the emerging or unfolding events. It has sections for current monitoring, an archive of forums, sharing of travel advice, information on consular contacts, and information on which countries will act as a lead state in the case of a crisis in third countries requiring coordination (Consular On-Line User Manual 2012). The website can be used for any type of crisis that has consular implications. It is available 24/7- not 'activated' for specific situations but always accessible. Crises during which information was shared through CoOL include the Haiti earthquake in 2010, the evacuation from Egypt in 2011, and the earthquake and tsunami in Fukushima, Japan, in 2011.

An updated version of CoOL was unveiled in 2012. The initiative to develop a new version was taken by the CCM division, and the member states were consulted in its development. The second version implied some software updates and the possibility for member states to update information in a collaborative table themselves, so that the numbers would be updated faster and in a more reliable way (Interview 2, 2013; Interview 3, 2013).

5 The council working group on consular issues, COCON, is negotiating a directive that aims to institutionalize the procedures of consular cooperation under the Lisbon Treaty.

Signature Case

A recent case that demonstrates how the CoOL website functions is the evacuation of European citizens from Libya in 2011. On 16 February 2011, the 'Arab spring' revolutions in the North Africa and the Middle East reached Libya. Demonstrations against its leader, Col. Muammar el-Qaddafi, were held in several cities, sparked by the arrests of human rights campaigners. The unrest was met with brute force and national aircraft attacks, which, in turn, fuelled escalation into a civil war (Cowell 2011; BBC Libya Profile: Timeline).

On the CoOL website, input 'threads' were started under a Libya folder on different subjects to help organize the evacuation of citizens from Libya. There were in total 6 threads concerning these events, covering several different aspects of the evacuation, such as evacuation by land, sea, air, people stranded in the desert, etc. The users were reporting on the number of their nationals to be evacuated, actions taken, any available consular representation, and offerings of help to each other, e.g. spare seats on aircraft.

Twenty-five out of the then-27 member states responded to the messages and threads opened in CoOL. The number of messages uploaded, as the national users continuously report and update their actions, can be vast. During this evacuation, more than 500 messages were posted on CoOL in the course of a few days. Users can review the information provided and communication threads in order to get a more complete picture of what EU member states are doing in response to a crisis.

CoOL was used simultaneously with other communication tools, such as telephone calls and conferences, emails and the COREU restricted communication system.

Analysis

After reviewing the use of CoOL during the evacuation of citizens from Libya, it is clear that CoOL is being used by a vast majority of the member states (25 out of 27 during the evacuations from Libya in 2011). As participation is not mandatory, this case suggests that the website is perceived as helpful and serving its purpose for its users.

We saw that the website was used as intended, to share information and support coordination between its users during a crisis. The users receive email notifications when a new message is uploaded, thus ensuring that they receive the latest updates if not logged on to the website. It was used for several different aspects of the Libya evacuation, and in combination with other communication tools.

CoOL was also used for seeking advice from other users, e.g. how a consular assistance request might be handled, in principle, by another EU government.

For scholars this would indicate not only a vehicle for policy learning but also possible policy coordination. Thus a system designed for simple information exchange can take on additional roles such as a debate and advice platform (this preliminary finding requires additional study, however).

The CoOL system services the first and third dimensions of sense-making by collecting information and making that information available to its users. CoOL is essentially a common platform for communicating member state actions regarding assistance to citizens in global crisis zones. Member states officials can ask questions and ask for help, and they can update others on latest actions taken. CoOL does not have an 'own analysis' function, in the sense that its administrators or EU officials are not analysing inputs to generate meta-level information, as this is not the purpose of the website. Some interviewees suggested, in fact, that the lack of a 'middle man' speeds the uploading and downloading information. This ensures that information is shared in real time and as fast as possible when the situation is urgent. CoOL can be used to detect emerging crises, too: the opening of a thread by one member state or the CCM division may serve as an early warning to others.

In 2006 an internal note from the Council Secretariat-General on consular protection of EU citizens in third countries suggested that the consular web-based forum (later called CoOL) should be used for 'less urgent' matters; for rapid exchange of information the more traditional COREU (a closed communication system) and emails should be used instead (Council of the European Union 2006: 8). The Libya case, however, suggests that CoOL was called on by member states for urgent communication, regardless of past practice (it may be the case that technology innovations have narrowed the speed gap between phone calls and automatically generated emails from the Web).

In short, the CoOL website fulfils the gather-and-share criteria in our analytical framework. The case of Libya suggests member states find the system useful, in that almost all participate. Some member states participate more vigorously than others, in that some actively ask for advice and reflections from other governments. Future research might usefully explore the drivers behind enthusiastic participation by some member states. Information provided via CoOL is in no way filtered or quality-controlled, raising questions about information overload (as happens in most crises). Finally, the plans currently being discussed in COCON, the Council working group on consular issues, to make CoOL participation more structured – and 'institutionalised' in the words of one interviewee – are worth following.

Case study 3: European Border Surveillance System (EUROSUR)

Tool	Gather	Analyse	Share
European Border Surveillance System (EUROSUR)	Yes	Yes	Yes

The European Border Surveillance system – EUROSUR – is an information system that focuses on border safety and security. The institutional home of EUROSUR is Frontex, the EU's border agency.[6] The aim of Frontex is to improve European border management by enhancing EU member states' border cooperation. To do this, Frontex carries out various tasks; the most important one for this study of crisis sense-making is its handling of information systems on emerging risks at the external borders.[7] Frontex is responsible for the European situational picture, while a National Coordination Centre in each participating state is responsible for providing a national situational picture (Regulation (EU) No 1052/2013: Art. 9 and 10).

A number of tragic incidents have highlighted the urgency of these tasks. One such incident occurred in October 2013, not far from the Italian island of Lampedusa, when an overcrowded boat carrying more than 500 African immigrants on their way to the EU caught fire and sank. More than 350 people, including small children, lost their lives. Similar accidents, albeit usually smaller, occur on a regular basis. In fact, due to the more than 10,000 known deaths that have occurred there in the past ten years, the Mediterranean has been called a 'graveyard for immigrants' (Bialasiewicz 2012: 848). EUROSUR was adopted by the EU only a few weeks after the Lampedusa tragedy, intended to become 'a key tool for the EU to prevent crises like the one outside Lampedusa' (Council Press Release 15031/13, 22 October 2013).

Overview

EUROSUR is evidence of how far Frontex has travelled in terms of the level of sophistication in the sharing of information on crises. In the first few years, Frontex staff was merely using Excel files to report incidents at the borders, which an interviewee, not surprisingly, described as both cumbersome and time-consuming (Interview 4, 2013).

6 Frontex is short for the European Agency for the Management of Operational Cooperation at the External Borders of the Member States of the European Union. For more about the origins and expansion of Frontex, see e.g. Leonard (2009) and Neal (2009).

7 Other tasks of Frontex are e.g. joint operations at EU borders, the organization of joint returns of captured irregular immigrants, the development of common training standards for border guards and to perform risk analysis concerning the situation at the EU borders.

EUROSUR had operated as a pilot project since 2011, and had thus been used in a limited capacity two years before its formal adoption. It connects the Frontex headquarters with EU countries that have a Southern or Eastern external border (i.e. Bulgaria, Croatia, Cyprus, Estonia, Finland, France, Greece, Hungary, Italy, Latvia, Lithuania, Malta, Poland, Romania, Slovak Republic, Slovenia and Spain).[8]

The purpose of EUROSUR is to exchange information between EU member states and Frontex, so as to 'improve situational awareness and to increase reaction capability at the external borders of the Member States of the Union ('external borders') for the purpose of detecting, preventing and combating illegal immigration and cross-border crime and contributing to ensuring the protection and saving the lives of migrants' (Regulation (EU) No 1052/2013: Art. 1). With this improved situational awareness, the EU argues that its reaction capability will increase, which will lead to fewer migrant fatalities close to the external borders. This means that EUROSUR is supposed to facilitate both crisis prevention and crisis response.

The reaction capability that EUROSUR, as a tool for crisis sense-making, is supposed to support consists of Frontex's joint operations and Frontex's European Border Guard Teams (EBGTs)[9] that are used for rapid border interventions when an EU member state considers itself to be under an exceptional pressure from large influxes of irregular immigrants. The latter has in reality only been used once, in late 2010 and early 2011, in the border areas of the Evros River region in North-Eastern Greece. Regular joint operations are much more commonplace.

EUROSUR functions on a permanent basis (and is thus not only activated in case of specific crisis events). EUROSUR serves the three dimensions of sense-making: information collection, analysis and information sharing. The information shared is near-real-time data, which means that the incidents have just recently occurred when they are fed into EUROSUR. It is not possible to study a signature case to assess these three aspects of crisis sense-making since such a case does not really exist yet.

The kind of information that is fed into EUROSUR is of three main types. The first type is 'Events', the second is 'Operational' and the third is 'Analysis'. The events type of information includes data such as irregular border crossings (including situations where there are risks for the lives of immigrants), cross-

8 It will also connect Norway, which is a Schengen country. The rest; Belgium, Germany, Netherlands and Sweden, will join in December 2014, while Denmark, United Kingdom and Ireland have so far chosen to opt out (Council of the European Union (2013) "Council adopts regulation establishing the EUROSUR system". Press Release, Brussels 22 October 2013).

9 The EBGTs are the merging of what was previously known as Rapid Border Intervention Teams (RABITs) and Frontex's pool of Joint Support Teams (FJST), (Frontex website).

border crime, crisis situations near the external borders (including both natural and man-made disasters), accidents, humanitarian and political crises that may have a large effect on the possibility to control the external borders and other events, including information on suspect vessels near the external borders. Each event is indicated with an impact level labelled 'low', 'medium' or 'high'.

Operational information pertains to the kinds of assets that are involved in relevant operations, as well as data on the environment, such as landscape information and weather at the external borders. The analysis type of information includes reports and briefing notes (Regulation (EU) No 1052/2013: Art. 9).

The information that is posted on EUROSUR comes primarily from the national coordination centres. The national situational pictures are based on information that the national coordination centre assembles from a variety of sources, out of which the most important ones are probably national border surveillance systems, national sensors run by national authorities with a responsibility for external border surveillance and patrols performing border surveillance and other monitoring missions.[10]

The European situational picture is drawn up based on information that Frontex itself collects, as well as on information from the national coordination centres, the Commission, EU delegations, other EU agencies, international organizations and other appropriate sources (Regulation (EU) No 1052/2013: Art. 10, para 2). Media can also be a useful source from which the Frontex Situation Centre collects information (Interview 4, 2013). This means that Frontex not only passively relies on information from other parties for its sense-making process, but also actively collects information from a number of sources. Another source of information is one of Frontex's other systems: the Joint Operations Reporting Application (JORA). In JORA, officers in the field register a range of incidents at the borders, one example being migrants drowning at sea. Since this is information that should also go into EUROSUR, Frontex has established an automatic link between the two systems. All the incidents that are registered in the JORA are automatically transferred to EUROSUR, once they have been validated by the Frontex Situation Centre (Interview 4, 2013).

EUROSUR also contains analytical information. Frontex's Risk Analysis Unit tries to make sense of the events information, for example the situational picture of the last 24 hours, by identifying midterm and long-term trends and possible solutions. The trends refer mainly to irregular immigration routes and solutions often refer to possible new, extended or downgraded Frontex operations (Interview 4, 2013; Frontex (2013) Panel Discussion III). There are

10 Other sources that each national coordination centre uses to draw up the national situational picture are local and regional coordination centres, ship reporting systems, national coordination centres of other member states, third country authorities, other authorities and systems, European and international organizations.

both annual and semi-annual risk assessments, as well as risk assessments that are customized, for instance for a Frontex joint operation (Laitinen 2008: 32).

Within EUROSUR, there is a possibility for the participants to exchange information both bilaterally and multilaterally. It also allows for audio and video conferencing. Information, non-classified as well as classified, is handled securely (Regulation (EU) No 1052/2013: Art. 7, para 1). To be able to use EUROSUR, training is needed. If a member would like to alter the functionality of EUROSUR, such proposals must be cleared by an advisory board.

Analysis

EUROSUR is in some respects the 'new kid on the block' but is rapidly developing into a potentially strong sense-making tool. The likelihood of EUROSUR being used for sense-making seems fairly high. It is a sophisticated tool that covers all three sense-making dimensions: information collection, data analysis and information sharing. Many users are connected to EUROSUR, including Frontex, all National Coordination Centres, and various national agencies responsible for border issues. During the pilot project, officials report that participation in EUROSUR was quite high, suggesting that national officials and EU officials find value in the system (Interview 4, 2013). Perhaps it helps that Frontex's legal competences are being expanded, and national participation is more obligatory than other systems owing to a Council Decision requiring engagement.

The nature of irregular immigration flows sometimes makes detection difficult and calls into question the kind of data being collected by EUROSUR. Information tends to be general in nature since specific data – the presence of a small boat carrying refugees – is difficult to find and report quickly. Further, the question of immigration is a politically charged area and the subjective nature of 'crises' is likely to cause controversy. Humanitarian aid communities, disaster relief communities, and border security communities each have a different notion of when mobilisation is important and what constitutes a crisis with European dimensions. It is not difficult to foresee EUROSUR being used by some countries to frame incidents in certain ways, so as to generate or suppress a coordinated response.

Case study 4: The Early Warning and Response System (EWRS)

Tool	Gather	Analyse	Share
Early Warning and Response System	Yes	Yes	Yes

At EU level, the legal basis for addressing health threats is regulated in Article 168 of the Lisbon treaty (TFEU), providing that community action shall complement national policies (Lisbon Treaty Article 168). The Early Warning and Response System (EWRS) is designed for information management during an acute human health crisis. Officials interviewed for this study argued that the EWRS has become increasingly used since its founding, not least because of the rise in the number of pandemics affecting Europe.

Overview

The Early Warning and Response System on communicable diseases was set up by the Commission Directorate General for Health and Consumers (DG SANCO) in 1998, following the Creutzfeldt-Jacob disease outbreak in the United Kingdom in 1990 (Zandén Kjellén 2009: 68f).[11] Since 2007, it has been operated by the European Centre for Disease Prevention and Control (ECDC), an EU agency located in Sweden.

The purpose of the system was to improve the prevention and control of communicable diseases (such as influenza, cholera, food and water-borne diseases, zoonoses, and the Creutzfeldt-Jacob disease) through epidemiological warning and an early warning and response system.

In October 2013, a new Decision (No 1082/2013/EU) replaced the original decision that established the EWRS. The functioning of EWRS was thereby extended to cover serious cross-border threats to health. This meant that the scope was expanded to also include events related to biological and chemical agents, environmental threats and threats of unknown origin that could endanger the health of the European citizens. Its purpose was restated to 'alerting, assessing public health risks and determining the measures that may be required to protect public health' (Decision No 1082/2013/EU: Art. 8).

Member States have to report events through the EWRS if they are unusual or unexpected for the given time and place, cause or may cause mortality in humans, grow or may grow rapidly in scale, exceed national response capacity, extend to more than one member state, require coordinated response at EU level, or need to be reported under the International Health Regulation to the

11 See EU Decision 2119/98/EC and Commission Decision 2000/57/EC that established the operative procedures of the EWRS.

World Health Organization (WHO) (Decision No 1082/2013/EU: Art. 9).[12]

EWRS is a restricted network that requires log in and password. It can only be accessed by nominated national contact points, experts from national ministries and agencies of the EU and EEA countries, the European Commission, DG SANCO, ECDC, the European Medicines Agency and the WHO (Guglielmetti et al. 2006: 4; Interview 5, 2013).[13] They can use the system to post alerts to all other users, respond to such message, or for selective communication between a limited number of users (Kjellén 2007: 23; Decision No 1082/2013/EU: Art. 16).

According to the new Decision, the Commission will ensure that relevant information from other rapid alert systems (presumably those within the field of health) will be communicated to the member states through the EWRS. This will be done by establishing a network of contact points within the other rapid alert systems, and executed 'manually' by contacting each other (Decision No 1082/2013/EU: preamble (8); Interview 6, 2013). This sharing of information from other systems through the EWRS is a novelty indicating that efforts are being made to avoid duplication and increase coherence between the different areas. This change is however yet to be implemented.

The EWRS is a tool that enables gathering, analysis and sharing of information on potential health threats. The system is always accessible, and the procedure of activation of a case thread on the EWRS is initiated when a national contact point or the Commission posts a message on the EWRS. All other users are then notified through an automatic email alert. As the messages are posted by national authorities, the content is previously confirmed on a national basis, and considered as officially validated (though not necessarily public) (Interview 5, 2013). The content of EWRS messages is presented at a daily 'roundtable' meeting at the ECDC, and the Surveillance and Response unit uses the uploaded information together with unofficial sources to produce risk assessments (posted by DG SANCO on the EWRS). Weekly reports are publically available on the ECDC website.

Between January 2005 and December 2012, 5701 messages were posted on the EWRS, whereof 1149 were new threads. Ten countries posted more than 200 messages each, nine countries between 100-200 messages each, one country posted no messages at all, and the European Commission posted 931 messages in total, accounting for 16 % of all postings (ECDC Annual Epidemiological Report 2013: 222ff).

12 Reporting is mandatory as decisions are fully binding to the participants, and any deviation thereof could prompt the Commission to bring the Member state before the European Court of Justice (Zandén Kjellén, 2009: 69).

13 The EWRS is technically still the Commission's tool, and due to existing agreements between the two, ECDC send their messages to DG SANCO, who then approves and posts them in the EWRS (Interview 5, 2013; ECDC Annual Epidemiological report 2013: 223).

Figure 3: Number of new threads and messages in the EWRS

Year	New threads	All other messages*	Total number per year
2005	87	133	220
2006	135	272	407
2007	79	467	546
2008	93	378	471
2009	501	1531	2032
2010	85	436	521
2011	96	757	853
2012	73	578	651
Total	**1149**	**4552**	**5701**

*comments on threads and selective messages
Source: Adapted from ECDC Annual Epidemological Report 2013: 222

Signature Case [14]

In March 2009, a new influenza virus triggered the use of EWRS. The virus, which had not affected humans before, was discovered in Mexico. It spread rapidly around the world, causing patterns of death and illness not normally seen in influenza infections, and to otherwise healthy people. By June 2009, when the WHO declared it as the first pandemic in 40 years, 74 countries and territories had already been infected (Ghersetti and Odén 2010: 7; Amato-Gauci et al. 2011: 1; WHO 2010).

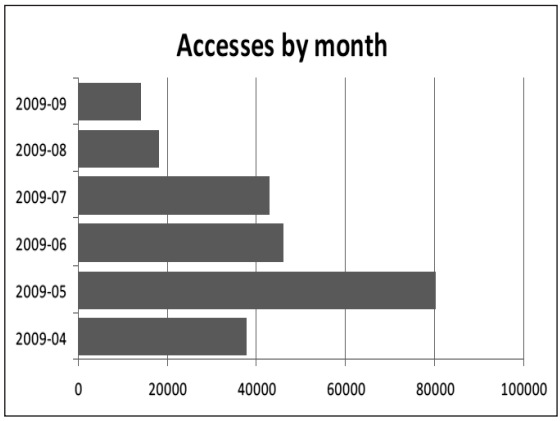
The first case in Europe was discovered on 19 April 2009. By May, EU and EEA countries had begun submitting case-based reports to the European Centre for Disease Prevention and Control (ECDC), using the Early Warning and Response System platform (Amato-Gauci et al. 2011: 1f). ECDC published its first analysis of the influenza situation in Europe on April 24, and the same day it sent a threat assessment update to the member states through the EWRS (Assessment report 2010: 16f).

The European member states and EU institutions communicated through a variety of tools, including the EWRS, the Health Emergency and Diseases Information System (HEDIS), Medisys, Arkadin, audio-conferences, emails and telephones (Assessment report 2010: 30-36). The EWRS was used most

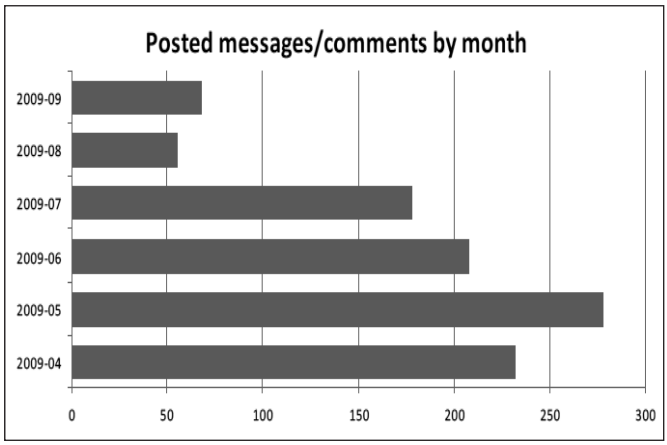
14 The sources for this section are derived from the report entitled 'Assessment report on the EU-wide Response to Pandemic (H1N1) 2009, Covering the period 24 April 2009-31 August 2009', published by the Health Protection Agency in 2010.

frequently during the initial phase of the influenza outbreak. It was used both as a notification tool and as a surveillance tool something it was not, however, designed to do. In the first four months, it was accessed at least twice a day by all participating states, peaking in May 2009 with 80,000 accesses that month, and around 40,000 accesses per month during April, June and July. The number of posted messages and comments also peaked in May at 275 messages, whereas April saw 230 messages, June 200 and July 175 (Assessment report 2010: 30f).

Figures 3 and 4: Number of accesses per month, and number of posted messages and comments per month



Source: Assessment Report 2010: 30



Source: Assessment Report 2010: 31

The amount of information uploaded on the EWRS caused some concern among users, as the huge number of uploads reportedly led to a loss of important information, and resulted in difficulties in sorting through the information and back-tracking in the system (Assessment report 2010: 30f). Another weakness of the system was that not all relevant actors were connected, or had access to the system. For instance, the European Medicines Agency (EMA) did not at that time have access to the EWRS, and was thereby not able to obtain early warning information for e.g. vaccination purposes (Assessment report 2010: 32f) (the EMA now has access to the EWRS).

Most member states sent their situation reports to the EWRS on a daily basis for the first four months, or until they implemented the mitigation phase. Some member states reported that the flow of information '…could result in a confused and inaccurate picture across the EU and WHO regions' (Assessment report 2010: 43f).

Some complaints were raised on the fact that member states had to report both to the EWRS and to the WHO, resulting in duplication of work and frustration (Assessment report 2010: 43). Other problems of the EWRS that were identified by the users include access/log-on difficulties, problems with the search function, data entry, submission and retrieval of information, excess information retrieved, poor quality information received and internet browser compatibility.

Analysis

The EWRS facilitates information gathering, analysis and sharing, as participants are obliged to share information, and products are directly disseminated to the users. The analysis is provided by the ECDC Surveillance and Response unit, which provides a 'European' perspective of the event. It is used by nationally nominated experts within ministries and agencies dealing with public health, and by the European Commission (DG SANCO), its related agencies, and is accessed by the WHO. Recent revisions to its mandate have opened up the possibility to cover a broader array of health threats, not only pandemics. The EWRS's main sense-making function is the understanding of crisis: dynamics and the consequences as an event unfolds. It can also perform detection, as national uploads put together can identify emerging health threats, and thereby provide early warning of crises to its users.

The EWRS seems to be one of the more dynamic systems functioning in the EU today, continuously developed through experience of successive pandemic influenzas. It is again under expansion, and will serve as an umbrella system for other health threats systems that are being consolidated. At the same time, the EWRS cannot escape criticism. Previous experience showed an information

overload problem – criteria on what constituted essential information were not clearly defined. Criteria regarding who could have access were also made in an ad hoc fashion, leading to complaints from some actors who were left out of the system. A major problem, which the EWRS shares with other systems, is overlap with other international organisations. Officials interviewed for this study report some degree of confusion amongst member states about the relationship between the EWRS and the World Health Organisation's own systems. Reporting requirements thus can become somewhat of a burden at times.

Concluding Comments

The emergence in the EU of tools and systems related to sense-making is one of the most prominent developments in the EU's crisis management capacity building. In 2005, we made a first inventory of these systems (Boin, Ekengren and Rhinard 2005). This report provides an update and a more systematic study of the EU's emergent sense-making capacity.

We found a variety of systems related to sense-making, variously called 'early-warning', 'rapid-alert' or 'communication systems'. They vary in terms of their functions. All systems collect information and all systems disseminate information. Analysing information takes place in two thirds of the systems studied. This means that the system allows EU officials to provide additional 'value added' to the information uploaded by member states. This 'value adding' takes various forms, and can include simply adding European-level information or conducting a more involved 'situation report' based on uploads. Few systems, however, actively synthesize, repackage, or build full-scale situation assessments based on raw dated uploaded from users.[15]

That may be some member states' preference. In the words of one national official, 'we want the "raw data" and wish to do the analysis ourselves, because every member state has such different preconditions' (Interview 7, 2013). Another official from the national level concurred, stating that:

> Sometimes the information coming from the EU feels dated and 'old'. Therefore a website where information could be shared directly between member states would be more helpful, as that would provide more timely information. There is no need for the EU to collect the info and then process it themselves (which then risks being outdated when finally published), when real-time info from other member states could give a better overall picture for other MS (Interview 8, 2013).

The systems are mostly sector-specific. They have emerged organically, in collaboration between Commission officials and networks of national officials working with the Commission. A strong focus is placed on the 'technology' of the system and thus seemingly innocuous information exchange takes precedence over policy or political issues.

Some consolidation is taking place at the 'intra-sector' level: the handful of systems that have sprung up regarding human health threats are now being consolidated in the EWRS (see pg. 38) while maritime security and safety networks are also undergoing a revamp. Inter-sectoral consolidation is rare, if not non-existent. Linking of sectoral systems is taking place, but only via

15 We should add that most systems were not designed to do analysis. In the few cases in which we see value-added analysis, the EU has an expressed remit to carry out 'own analysis'.

the Commission's ARGUS system-of-systems and the Council's ICPR Web Platform. Some interviewees recognised that modern crises will require a joined-up capacity to process relevant information. One national-level interviewee went so far as to say: 'That is the aim, but that has not been the case so far. There is however some sector specific exchange of information that other ministries are taking part of, taking place e.g. within the working groups, and some other information sharing' (Interview 8, 2013). But this particular official lamented the lack of an overarching perspective.

Users of the different systems vary considerably. For most systems, usage is restricted to the appointed actors within a policy field, while some allow the public to view activity, e.g. those on weather forecasts. Most systems are accessible only to the responsible national 'contact points' (typically an agency or unit within a ministry) in addition to a wider group of users deemed relevant: other international organizations' officials or EU agency personnel, for instance. Almost half of the systems operating at the EU level are managed, used and processed in physical 'crisis rooms'. There is no common pattern regarding the automaticity of updates and information flows: in some systems, computer updating takes place while in others, human updating is the norm. We also found that the systems differ in terms of interactivity and communication. Some systems are little more than platforms for uploading information, while other systems allows for communication and dialogue (even if interactive discussion is not the intended purpose).

Our case studies and interviews add nuance to these findings. They find that member states participate in these systems at varying degrees of enthusiasm, despite the fact that participation can be legally obligatory. A degree of 'peer pressure' characterizes participation dynamics, meaning that member states want to avoid being seen as doing nothing if colleagues in other governments are actively engaging. A national official interviewed for this study echoed a related dynamic: the workload generated by these systems and the perceive lack of 'return on investment'. The official complained that 'the request for situational awareness comes from above, from the decision makers and funders. They need the information to get a full picture of the situation. It's like we are at the end of the food chain, because we have this information, and we are the ones doing the operative work. We always have to report up and therefore we contribute to the creation of the situational awareness' (Interview 9, 2013).

Some systems are used beyond what they were originally intended to do. Thus, a system to notify and signal activity becomes a tool for seeking advice and possibly coordinating policy (as took place in the CoOL system during Libya; and as took place in the EWRS during a pandemic).

The case studies illuminated how differently these systems can function and perform. The EUROSUR and EWRS systems serve the aim of crisis detection,

as they provide real-time data on events; they also facilitate understanding, since they also provide a synthesis of the data. The IPCR, which will be activated when a situation is deemed as a crisis, i.e. already detected, may provide an understanding of events as input from different actors are puzzled together and presented as ISAA reports through the IPCR website, providing an EU-wide perspective. The CoOL website can aid its users in the detection of crises, as national information is uploaded and instantly available to other users. The understanding of the scope of the event will however have to be put together by the users themselves.

All systems probed in our case studies indicate the dependency on critical infrastructure, and on internet in particular. This suggests a potential vulnerability, as communication systems often break down during large-scale crises and disasters.

The sectoral origin of many tools might not be surprising, considering that authority is also fragmented sectorally at the EU level. After a crisis in a particular sector, national representatives in that sector (agriculture ministers, for example) will be quick to approve a new system as part of the recovery process, to show that 'something is being done'. But political oversight fades, and very few actors in Brussels have cross-sectoral and cross-institutional responsibilities. COREPER is one, and they are active in ICPR; the Commission's Secretariat-General has recently tried to coordinate inter-sectorally in the Commission, but the unit responsible is being disbanded. It is not clear, therefore, who might be in charge of harnessing the full information collection, analysis, and dissemination potential currently housed in Brussels.

Integration is taking place (for reasons we can only speculate about, such as cost-savings and rationalisation), but that is happening mainly within sectors (we are thus likely to see a drop in the number of systems in coming years). Cross-sectoral efforts – including ARGUS and the ICPR – are progressing, but as we know from other studies (Boin, Ekengren and Rhinard 2013), those efforts are slow and bedevilled by tremendous variation in systems.

We found signs in our general inventory that many systems had recently undergone reform or were scheduled for 'improvement'. That pattern matches what we found in our individual case studies; three out of the four were either newly revised or under further development. Most of these changes relate to ease-of-use and improved functionality based on criticism from past use. For some systems (CoOL, for instance) plans were underway for formalising procedures. Thus, change seems in the air, and worth further research.

There is scant evidence regarding the 'effectiveness' of these sense-making systems. Some formal, internal reviews have taken place, as in the examples of the CCA and the EWRS. Changes taking place do not appear to be motivated by crisis management effectiveness but rather efficiency (e.g. finding simpler

ways for member states to participate). In any case, the question of effectiveness may be moot, considering that while EU institutions may rely on these systems for decision-making, member states are far from reliant on them. On a similar note, our findings here reveal very little data verification or quality control of uploaded information taking place. What member states want to upload, they can upload; any control would have to take place at the national level.

Within the systems that involve some degree of 'analysis', the form and style of that analysis range considerably. Moreover, analysis is rarely a meta-level aggregation of the raw data uploaded into a system. It normally is added alongside other information available, as a kind of extra input. It appears that member state governments are most likely to undertake sense-making at home, within national capitals, with information from various sources – including the EU – rather than at the EU level.

This prompts at least three questions:

1. *EU sense-making tools as information sharing platforms: will that be enough for the response to a transboundary crisis?* Transboundary crises are hard to manage without adequate, joint sense-making. While sharing information is a useful first step, enhanced analysis is needed to carve out a sense-making role for the EU.

2. *Is it possible to move ahead, and get better tools, given the institutional complexities of the EU?* While the glass may be half empty, we should note that much has happened in recent years. In this report, we have noted promising new initiatives. It is therefore entirely possible that the EU will further enhance its sense-making capacity in the coming years.

3. *Do the member states need joint sense-making at the EU level?* We believe that member states would benefit from enhanced EU sense-making capacity to deal with transboundary crises. But we note that the EU has not demonstrated critical 'value added' just yet.

We would suggest further research into 'national contact points' to understand who is the national node, what drives their participation, what is their degree of commitment, and what this reflects about European cooperation. Are member states finding participation useful and crucial, or is it an unwelcome burden? As transboundary crises increase, are these systems something to be developed or jettisoned?

Finally, these results prompt questions about the value added of the proliferation of EU systems. What is, and what should be, the EU's value added? At the moment, and for the most part, it appears that the EU simply provides a

platform for 28 'eyes' to share what they see. On occasion, the EU institutions add their own information to make it 29 eyes. Rarely, if at all, do EU officials take the information from 29 sources and develop a unique, added-value product that is then returned to member states. Without such unique EU-produced crisis reporting, it may be hard to make the case for more information sharing.

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Interview 1: Email correspondence 22 November 2013 with official at the Council Secretariat General, Brussels

Interview 2: Phone interview 24 October 2013 with official at EEAS, Brussels

Interview 3: Email correspondence 24 June 2013 with official at EEAS, Brussels

Interview 4: Phone interview 15 November 2013 with official at Frontex, Warsaw

Interview 5: Interview 31 October 2013 with official at ECDC, Solna

Interview 6: Phone interview 2 December 2013 with official at DG SANCO, Luxembourg

Interview 7: Interview 31 May 2013 with officials at the Swedish Civil Contingency Agency, Stockholm

Interview 8: Interview 18 March 2013 with official within the Governments Office, Stockholm

Interview 9: Interview 22 April 2013 with official at the Swedish Civil Contingency Agency, Karlstad

Interview 10: Phone interview 5 July 2013 with official at EEAS, Brussels

Interview 11: Email correspondence 29 January 2014 with official at EEAS, Brussels

Interview 12: Email correspondence 13 December 2013 with official at ENISA, Crete

Interview 13: Phone interview 11 December 2013 with official at DG HOME, Brussels

Interview 14: Interview 19 June 2013 with official at EEAS, Brussels

Annex I. Inventory table

Comprehensive overview of systems and tools	Gather	Analyse	Share
Animal Disease Notification System (ADNS)- DG SANCO	Y	N	Y
Anti-piracy monitoring service (MARSURV-1)- European Maritime Safety Agency EMSA	Y	N	Y
ARGUS- DG SG	Y	N	Y
CleanSeaNet- EMSA	Y	Y	Y
Common Emergency Communication and Information System (CECIS)- DG ECHO	Y	N	Y
Common Information Sharing Environment (CISE)- DG MARE (under development)	Y	N	Y
Common Integrated Risk Analysis Model (CIRAM)- Frontex	Y	Y	Y
Consular On-line Website (CoOL)- EEAS Consular Crisis Management	Y	N	Y
Copernicus- European Space Agency	Y	Y	Y
Critical Infrastructure Warning Information Network (CIWIN)- DG HOME	Y	N	Y
Crop yield forecasting system (AGRI4CAST)- Joint Research Centre JRC, used by DG AGRI	Y	Y	Y
Customs Information System (CIS I & III)- OLAF	Y	N	Y
DG SANCO internal crisis intranet- DG SANCO	Y	N	Y
Early Warning and Response System (EWRS)- European Centre for Disease Prevention and Control ECDC	Y	Y	Y
Early Warning Mechanism- DG ENERG	Y	Y	Y
Early Warning System (Joint Report)- DG Justice (EMDDA and EUROPOL)	Y	Y	Y
Early Warning System on Conflict Prevention- EEAS Security Policy and Conflict Prevention Unit (not yet rolled out)	Y	Y	Y
ECDC Epidemic Intelligence Unit- ECDC	Y	Y	Y
Emergency Response Coordination Centre (ERCC)- DG ECHO	Y	Y	Y
Emergency Response Coordination Portal (ERC Portal)- DG ECHO	Y	N	Y
ENSEMBLE- JRC	Y	Y	Y
Epidemic Intelligence Information System (EPIS)- ECDC	Y	N	Y
EU Delegation Reports- EEAS	Y	N	Y
EU Long Range Identification and Tracking System Cooperative Data Centre (EU LRIT CDC)- EMSA	Y	N	Y
EU MS Intelligence- EEAS	Y	Y	Y

EU Special Representatives Reports- EEAS	Y	N	Y
Europe Media Monitor News Brief (EMM)- JRC	Y	Y	Y
European Border Surveillance System (EUROSUR)- Frontex	Y	N	Y
European Community Urgent Radiological Information Exchange (ECURIE)- JRC	Y	N	Y
European Coordination Centre for Accident and Incident Reporting Systems (ECCAIRS)- JRC (on request by DG MOVE)	Y	Y	Y
European Cybercrime Centre (E3C)- Europol	Y	Y	Y
European Drought Observatory- JRC	Y	Y	Y
European Flood observatory (EUFO)- JRC	Y	N	Y
European Flooding Awareness System (EFAS)- JRC	Y	Y	Y
European Forest Fire Information System (EFFIS)- JRC	Y	Y	Y
European Migration Network (EMN)- DG HOME	Y	N	Y
European Patrol Network- Frontex	Y	N	Y
European Radiological Data Exchange Platform (EURDEP)- JRC	Y	N	Y
European Union Notification System for Plant Health Interceptions (EUROPHYT)- DG SANCO	Y	N	Y
Europol 24/7 Operational Centre- Europol	Y	Y	Y
Europol Analysis System (EAS)- Europol	Y	Y	Y
Europol Platform for Experts (EPE)- Europol	Y	N	Y
Fingerprint database (EURODAC)- DG HOME	Y	Y	Y
Frontex One-Stop-Shop (FOSS)- Frontex	N	Y	Y
Frontex Situation Centre (FSC)- Frontex	Y	Y	Y
Galileo Security Monitoring Centre (GSMC)- European Global Satellite Navigation System Agency GSA	Y	Y	Y
Global Disaster Alert and Coordination System (GDACS)- DG ECHO & UN OCHA	Y	Y	Y
Global flood detection system- JRC	Y	Y	Y
Global Flooding Awareness System (GloFAS)- JRC (experimental)	Y	Y	Y
Global Human Settlement Layer (GHSL)- DG RADIO and JRC	Y	Y	Y
Health Emergency & Disease Information System (HEDIS)- DG SANCO	Y	Y	Y
Health Emergency Operations Facility (HEOF)- DG SANCO	Y	Y	Y
Information and Coordination Network (ICONET)- Frontex	Y	Y	Y
Integrated Political Crisis Response (IPCR) Web Platform- Council Civil Protection Unit	Y	Y	Y

Integrated Situational Analysis and Awareness (ISAA)- EEAS/COM	Y	Y	Y
Intelligence Centre (Intcen)- EEAS	Y	Y	Y
Joint Operations Reporting Application (JORA)- Frontex	Y	Y	Y
Macroeconomic Imbalance Procedure (MIP)- DG ECFIN	Y	Y	Y
Maritime Analysis and Operations Centre - Narcotics (MAOC (N))	Y	Y	Y
Maritime Support Services Centre- EMSA	Y	Y	Y
Marsur- European Defence Agency EDA (emerging)	Y	N	Y
Medical Intelligence System (MedISys)- JRC/DG SANCO	Y	Y	Y
ODIN- EEAS	Y	Y	Y
Radicalisation Awareness Network (RAN)- DG HOME	Y	N	Y
Rapid Alert System for Biological and Chemical Attacks and Threats (RAS-BICHAT)- DG SANCO	Y	Y	Y
Rapid Alert System for Food and Feed (RASFF)- DG SANCO	Y	Y	Y
Rapid alert system for non-food dangerous products (RAPEX)- DG SANCO	Y	Y	Y
Rapid Alerting System for Chemical Health Threats (RAS CHEM)- DG SANCO (not yet implemented)	Y	?	Y
Risk Management Unit- European Network and Information Security Agency ENISA	Y	Y	Y
SafeSeaNet- EMSA	Y	N	Y
Satellite Centre (Satcen)	Y	Y	Y
Schengen Information System (SIS I & II)- DG HOME	Y	Y	Y
Secure Information Exchange Network Application (SIENA)- Europol	Y	N	Y
Shared Environmental Information System (SEIS)- European Environment Agency, EEA	Y	N	Y
Single Intelligence Analysis Capacity (SIAC)- EEAS MS Intelligence and Intcen	Y	Y	Y
Situation Room 24/7- EEAS	Y	Y	Y
Strategic Analysis and Response Centre (STAR)- DG HOME	Y	Y	Y
Systemic Model of Banking Originated Losses (SYMBOL)- JRC	N	Y	Y
Tarîqa- EEAS Situation Room	Y	Y	Y
The European Surveillance System (TESSy)- ECDC	Y	N	Y
Threat Tracking Tool (TTT)- ECDC	Y	N	Y
Water level forecast system (LISFLOOD)- JRC	Y	Y	Y
Vessel Detection System (VDS)- JRC	Y	Y	Y
Visa Information System (VIS)- DG HOME	Y	Y	Y

Systems and tools providing analysis	Gather	Analyse	Share
CleanSeaNet- EMSA	Y	Y	Y
Common Integrated Risk Analysis Model (CIRAM)- Frontex	Y	Y	Y
Copernicus- European Space Agency	Y	Y	Y
Crop yield forecasting system (AGRI4CAST)- JRC, used by DG AGRI	Y	Y	Y
Early Warning and Response System (EWRS)- ECDC	Y	Y	Y
Early Warning Mechanism- DG ENERG	Y	Y	Y
Early Warning System (Joint Report)- DG Justice (EMDDA and EUROPOL)	Y	Y	Y
Early Warning System on Conflict Prevention- EEAS Security Policy and Conflict Prevention Unit (not yet rolled out)	Y	Y	Y
ECDC Epidemic Intelligence Unit- ECDC	Y	Y	Y
Emergency Response Coordination Centre (ERCC)- DG ECHO	Y	Y	Y
ENSEMBLE- JRC	Y	Y	Y
EU MS Intelligence- EEAS	Y	Y	Y
Europe Media Monitor News Brief (EMM)- JRC	Y	Y	Y
European Coordination Centre for Accident and Incident Reporting Systems (ECCAIRS)- JRC (on request by DG MOVE)	Y	Y	Y
European Cybercrime Centre (E3C)- Europol	Y	Y	Y
European Drought Observatory- JRC	Y	Y	Y
European Flooding Awareness System (EFAS)- JRC	Y	Y	Y
European Forest Fire Information System (EFFIS)- JRC	Y	Y	Y
Europol 24/7 Operational Centre- Europol	Y	Y	Y
Europol Analysis System (EAS)- Europol	Y	Y	Y
Fingerprint database (EURODAC)- DG HOME	Y	Y	Y
Frontex One-Stop-Shop (FOSS)- Frontex	N	Y	Y
Frontex Situation Centre (FSC)- Frontex	Y	Y	Y
Galileo Security Monitoring Centre (GSMC)- European Global Satellite Navigation System Agency GSA	Y	Y	Y
Global Disaster Alert and Coordination System (GDACS)- DG ECHO & UN OCHA	Y	Y	Y
Global flood detection system- JRC	Y	Y	Y
Global Flooding Awareness System (GloFAS)- JRC (experimental)	Y	Y	Y
Global Human Settlement Layer (GHSL)- DG RADIO and JRC	Y	Y	Y

Health Emergency & Disease Information System (HEDIS)- DG SANCO	Y	Y	Y
Health Emergency Operations Facility (HEOF)- DG SANCO	Y	Y	Y
Information and Coordination Network (ICONET)- Frontex	Y	Y	Y
Integrated Political Crisis Response (IPCR) Web Platform- Council Civil Protection Unit	Y	Y	Y
Integrated Situational Analysis and Awareness (ISAA)- EEAS/COM	Y	Y	Y
Intelligence Centre (Intcen)- EEAS	Y	Y	Y
Joint Operations Reporting Application (JORA)- Frontex	Y	Y	Y
Macroeconomic Imbalance Procedure (MIP)- DG ECFIN	Y	Y	Y
Maritime Analysis and Operations Centre - Narcotics (MAOC (N))	Y	Y	Y
Maritime Support Services Centre- EMSA	Y	Y	Y
Medical Intelligence System (MedISys)- JRC/DG SANCO	Y	Y	Y
ODIN- EEAS	Y	Y	Y
Rapid Alert System for Biological and Chemical Attacks and Threats (RAS-BICHAT)- DG SANCO	Y	Y	Y
Rapid Alert System for Food and Feed (RASFF)- DG SANCO	Y	Y	Y
Rapid alert system for non-food dangerous products (RAPEX)- DG SANCO	Y	Y	Y
Risk Management Unit- European Network and Information Security Agency ENISA	Y	Y	Y
Satellite Centre (Satcen)	Y	Y	Y
Schengen Information System (SIS I & II)- DG HOME	Y	Y	Y
Single Intelligence Analysis Capacity (SIAC)- EEAS MS Intelligence and Intcen	Y	Y	Y
Situation Room 24/7- EEAS	Y	Y	Y
Strategic Analysis and Response Centre (STAR)- DG HOME	Y	Y	Y
Systemic Model of Banking Originated Losses (SYMBOL)- JRC	N	Y	Y
Tarîqa- EEAS Situation Room	Y	Y	Y
Water level forecast system (LISFLOOD)- JRC	Y	Y	Y
Vessel Detection System (VDS)- JRC	Y	Y	Y
Visa Information System (VIS)- DG HOME	Y	Y	Y

Situation rooms and monitoring units	Gather	Analyse	Share
ECDC Epidemic Intelligence Unit- ECDC	Y	Y	Y
Emergency Response Coordination Centre (ERCC)- DG ECHO	Y	Y	Y
EU MS Intelligence- EEAS	Y	Y	Y
European Cybercrime Centre (E3C)- Europol	Y	Y	Y
Europol 24/7 Operational Centre- Europol	Y	Y	Y
Frontex Situation Centre (FSC)- Frontex	Y	Y	Y
Galileo Security Monitoring Centre (GSMC)- European Global Satellite Navigation System Agency GSA	Y	Y	Y
Health Emergency Operations Facility (HEOF)- DG SANCO	Y	Y	Y
Intelligence Centre (Intcen)- EEAS	Y	Y	Y
Maritime Analysis and Operations Centre - Narcotics (MAOC (N))	Y	Y	Y
Maritime Support Services Centre- EMSA	Y	Y	Y
Situation Room 24/7- EEAS	Y	Y	Y
Strategic Analysis and Response Centre (STAR)- DG HOME	Y	Y	Y

Annex II. Short descriptions of tools

Animal Disease Notification System (ADNS), DG SANCO
A notification system between competent authorities of the member states and the Commission to register, monitor and prevent the spread of contagious animal diseases. The Commission correlates reported data and transmits it to national veterinary centres with whom it shares risk management responsibilities,
(http://ec.europa.eu/food/animal/diseases/adns/adns_en.htm#desc).

Anti-piracy monitoring service (MARSURV-1), European Maritime Safety Agency EMSA
A service developed by EMSA for the EU NAVFOR mission to track merchant vessels of the coast of Somalia in real-time,
(http://www.emsa.europa.eu/combined-maritime-data-menu/anti-piracy-monitoring-service-marsurv.html).

ARGUS, DG SG
Argus is an internal cross-sectoral network for information sharing between the rapid alert systems of the EU Commission and its services. It is a separate system (not connecting the other systems), managed by the DG Secretariat General of the Commission,
(http://ec.europa.eu/health/preparedness_response/generic_preparedness/planning/argus_en.htm).

CleanSeaNet, EMSA
A satellite based oil-spill and vessel detection systems aimed at identifying, tracing and monitoring oil-spills in all European sea areas. Satellite images are analysed by the Maritime Support Services at EMSA, who notifies national authorities when an oil-spill is detected,
(http://www.emsa.europa.eu/operations/cleanseanet.html).

Common Emergency Communication and Information System (CECIS), DG ECHO
A communication system between the ERCC of DG ECHO and national authorities aimed at better protecting citizens from natural and technological hazards. CECIS hosts a database on potentially available assets, is used to handle requests of assistance, to exchange information, and for documentation of actions and messages,
(http://ec.europa.eu/echo/policies/disaster_response/cecis_en.htm).

Common Information Sharing Environment (CISE), DG MARE
The Common Information Sharing Environment is currently being developed to integrate existing maritime surveillance systems and networks (covering border control, fisheries, customs, environment, defence etc.) to be available and interoperable to all relevant authorities,
(http://ec.europa.eu/maritimeaffairs/policy/integrated_maritime_surveillance/index_en.htm).

Common Integrated Risk Analysis Model (CIRAM), Frontex
A risk analysis model developed and used by Frontex to analyse all data received from member states, EU bodies and open sources. It is used to identify short-, medium- and long term trends of external border security and to provide foundation for coordinating joint operations,
(http://frontex.europa.eu/intelligence/risk-analysis).

Consular On-line Website (CoOL), EEAS Consular Crisis Management
CoOL is web platform managed by the consular Crisis Management unit in the EEAS. It functions as a hub for information exchange on consular protection, and to coordinate responses in crises with consular implications,
(http://www.eeas.europa.eu/crisis-response/what-we-do/consular/index_en.htm).

Copernicus, European Space Agency
Copernicus is a European earth observation programme, using satellite images from the European Space Agency and in-situ information from the European Environment Agency and member states to provide services (information and data) in the areas of land, marine, atmosphere, climate change, emergency management and security,
(http://www.copernicus.eu/pages-principales/overview/copernicus-in-brief/).

Critical Infrastructure Warning Information Network (CIWIN), DG HOME
A closed internet based communication tool for information exchange between recognized members of the European critical infrastructure community. It is used to exchange information, studies and good practices across the affected sectors,
(https://ciwin.europa.eu/Pages/Home.aspx).

Crop yield forecasting system (AGIR4CAST), Joint Research Centre JRC
System used by DG AGRI but managed by the JRC to provide timely crop production forecasts to support CAP management decisions. It uses remote sensing and meteorological observations and forecasts to perform modelling

and statistical analyses. Results are published in Mars bulletins regularly, (http://mars.jrc.ec.europa.eu/mars/About-us/AGRI4CAST/Crop-Monitoring-and-Yield-Forecasting; http://mars.jrc.ec.europa.eu/mars/About-us/AGRI4CAST).

Customs Information System (CIS I & III), European Anti-Fraud Office OLAF

CIS I & III are information sharing databases for customs monitoring of criminal activities. CIS I aims at preventing crimes against the EU's common customs and agricultural legislation, and CIS III facilitates communication to prevent crimes against the member states national customs legislations, (http://www.datainspektionen.se/om-oss/internationellt-arbete/customs-information-systems/).

DG SANCO internal crisis intranet

The internal crisis intranet is an internal network where all units within DG SANCO dealing with health emergency management upload information on their actions to provide the Commission decision makers with information for taking decisions, (http://ec.europa.eu/health/archive/ph_threats/com/preparedness/docs/heof_en.pdf).

Early Warning and Response System (EWRS), European Centre for Disease Prevention and Control ECDC

The EWRS is a restricted network connecting inter alia the Commission (DG SANCO), the ECDC, the World Health Organization, and national contact points in health ministries and agencies. Previously used only for reporting on communicable diseases, its scope was broadened in October 2013 to cover all serious cross-border threats to health (interview 5, 2013, http://ec.europa.eu/health/preparedness_response/docs/decision_serious_crossborder_threats_22102013_en.pdf).

Early Warning Mechanism, DG ENERG

Established after the gas dispute between the EU and Russia in 2009, this mechanism aims to provide a rapid reaction if there is a significant disruption or interruption in the delivery of gas, oil or electricity from Russia. Both partners are to analyse the situation and elaborate recommendations, and the mechanism also functions to monitor and record circumstances during an emergency, (http://ec.europa.eu/energy/international/russia/dialogue/warning_en.htm).

Early Warning System (and Joint Report), DG JUST

A system for the exchange of information when new psychoactive substances

have been found in the EU. When a new substance that has been reported requires more information, the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) and Europol together produce joint reports and risk assessments on the substance,
(http://ec.europa.eu/justice/anti-drugs/new-drugs/index_en.htm
http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2005:127:0032:0037:en:PDF).

Early Warning System on Conflict Prevention, EEAS Security Policy and Conflict Prevention Unit
A recently developed analysis method by the EEAS Security Policy and Conflict Prevention Unit to identify risks of violent conflict and opportunities for early action. Engages EU delegations, Intcen and EU MS intelligence and consults member states to produce a checklist for structural risks, and country conflict risk reports. Not yet rolled out but used during pilot case studies (interview 10, 2013).

ECDC Epidemic Intelligence Unit, ECDC
The Epidemic intelligence unit is tasked with detecting, verifying, analysing, assessing, and investigating in order to provide early warning on public health threats from communicable diseases,
(http://www.ecdc.europa.eu/en/activities/epidemicintelligence/Pages/Activities_EpidemicIntelligence.aspx).

Emergency Response Coordination Centre (ERCC), DH ECHO
The ERCC replaces the MIC function to support coordinated and quick responses to disasters inside and outside of Europe. The ERCC functions as a coordination hub for the participating states (EU 28+4), and collects and analyses real-time information on disasters and hazards, as well as provides assessments of the needs in external crises. ERCC also dispatches teams of experts to crises areas who evaluates and monitor the situation, analyse it, and report back to the ERCC headquarters,
(http://ec.europa.eu/echo/policies/disaster_response/mic_en.htm;
http://ec.europa.eu/echo/about/ERC_en.htm).

Emergency Response Coordination Portal (ERC Portal), DG ECHO
The ERCC administers a web portal (other than the webpage of the DG ECHO and ERCC) with both a public and a non-public version (requiring login and password). The ERCC portal contains ECHO Daily Flashes, weather forecasts, maps and links to monitoring tools,
(http://ercportal.jrc.ec.europa.eu/).

ENSEMBLE, JRC
ENSEMBLE is a web platform originally designed to harmonize national long range dispersion forecasts in case of nuclear accidents, but has since evolved into a service for any atmospheric modelling. It connects national meteorological institutes, atomic energy institutes and universities,
(http://ensemble2.jrc.ec.europa.eu/public/
http://ensemble2.jrc.ec.europa.eu/public/?page_id=8;
http://rem.jrc.ec.europa.eu/RemWeb/activities/Ensemble.aspx).

Epidemic Intelligence Information System (EPIS), ECDC
EPIS is a web based communication platform for informal and technical communication between national public health experts. EPIS is used on a voluntary basis, and before health threats are validated, and then notified through the EWRS system (Introduction to EPIS FWD, pp. 3, 5, available at:
http://external.ecdc.europa.eu/EPIS_FWD/).

EU Delegation Reports, EEAS
The 139 EU Delegations around the world send diplomatic reports and analyses on the current situation in their country and region to the EEAS (regional desks and management),
(http://eeas.europa.eu/delegations/gulf_countries/about_us/delegation_role/index_en.htm).

EU Long Range Identification and Tracking System Cooperative Data Centre (EU LRIT CDC), EMSA
The EU LRIT CDC tracks and identifies all vessels under EU flags worldwide that are mandatorily connected to the Long Range Identification and Tracking System. The Centre exchanges this information with other data centres, and can thereby provide the EU member states with information on any third country vessel approaching EU waters,
(http://emsa.europa.eu/lrit-home.html
http://emsa.europa.eu/operations/lrit.html).

EU MS Intelligence, EEAS
The EU Military Staff Intelligence Unit of the EEAS uses information from the EU Satellite Centre and requests national military intelligence to produce briefings and reports for the crisis response planning, operations and exercises of the EEAS,
(http://consilium.europa.eu/media/1971369/impetus_n15.pdf p. 11;
http://www.eeas.europa.eu/csdp/documents/pdf/final_-_impetus_11_en.pdf p. 8;
http://www.eeas.europa.eu/csdp/structures-instruments-agencies/eu-military-staff/organization/index_en.htm).

EU Special Representatives Reports, EEAS
The EU Special Representatives report both to the HR/VP and to the member states through its direct reporting line COREU with the Political and Security Committee and the Council working parties,
(http://www.clingendael.nl/sites/default/files/Early%20warning%20and%20early%20response%20capacity%20for%20conflict%20prevention%20in%20the%20post-Lisbon%20era_0.pdf p. 8f).

Europe Media Monitor News brief (EMM), JRC
EMM is a news aggregation system developed by the JRC. It covers various sources in 60 languages, and the user can filter information by language and through selecting sources. It is a public system that also provides a rapid news service and individualized newsletters to registered users,
(http://emm.newsbrief.eu/overview.html).

European Border Surveillance System (EUROSUR), Frontex
EUROSUR is an information sharing tool between the Schengen countries and Frontex aimed at preventing illegal immigration and cross border crime, and to protect and save lives of migrants. Information on events, operations and analyses are fed into EUROSUR by the national coordination centres and by Frontex' Risk Analysis Unit,
(http://frontex.europa.eu/intelligence/eurosur).

European Community Urgent Radiological Information Exchange (ECURIE), JRC
ECURIE is an early notification system for the event of a nuclear or radiological emergency. It requires member states to report on any intended and carried out counter-measures, and on the radiological levels measured nationally. It is managed by the JRC Radioactivity Environmental Monitoring group, who also administers the EURDEP and ENSEMBLE tools,
(http://rem.jrc.ec.europa.eu/RemWeb/activities/Ecurie.aspx;
http://rem.jrc.ec.europa.eu/RemWeb/activities/EmergencyMonitoring.aspx).

European Coordination Centre for Accident and Incident Reporting System (ECCAIRS), JRC
ECCAIRS is a cooperative network of national transport authorities and accident investigation bodies managed by the JRC on request by DG MOVE to improve transport safety by assisting the users in their collection, analysis and sharing of information,
(http://eccairsportal.jrc.ec.europa.eu/index.php?id=78).

European Cybercrime Centre (E3C), Europol
The E3C provides a 24/7 helpdesk, data fusion from different sources, and processes and analyses data to rapidly identify emerging cyber threats, (https://www.europol.europa.eu/ec3/services).

European Drought Observatory, JRC
The European Drought Observatory collects precipitation measurements and remote sensing images, complements it with national, regional and local additional drought indices, and provides an analysis on the current drought situation and imminent risks thereof,
(http://edo.jrc.ec.europa.eu/edov2/php/index.php?id=1001).

European Flood observatory (EUFO), JRC
EUFO, a central website established in 2009 containing e.g. early warning info from EFAS, and links to European and global websites on floods,
(http://ec.europa.eu/dgs/jrc/index.cfm?id=1670&obj_id=PROJECTSJPB32001&dt_code=ACT&lang=en,
http://floods.jrc.ec.europa.eu/home.html).

European Flooding Awareness System (EFAS), JRC
EFAS produces European overviews and forecasts of floods. It was developed by the JRC, but is now part of the Copernicus emergency management service. EFAS is also a hydrological network and executed by a consortia of European and national institutes,
(http://www.efas.eu/
http://www.copernicus.eu/pages-principales/services/emergency-management/).

European Forest Fire Information System (EFFIS), JRC
EFFIS consists of scientific and technical experts at the JRC, national experts, a web based platform and a database. EFFIS provides EU level analyses on all phases of forest fires, and aims to support the services in charge of protection against forest fires,
(http://forest.jrc.ec.europa.eu/effis/about-effis/).

European Migration Network (EMN), DG HOME
EMN is a network connecting national points-of-contacts who in their turn coordinate national networks of stakeholders. The EMN aims at providing up-to-date information on immigration and asylum issues to the European institutions and the member states, and produces informative reports and compilations,

(http://ec.europa.eu/dgs/home-affairs/what-we-do/networks/european_migration_network/about/index_en.htm
http://ec.europa.eu/dgs/home-affairs/what-we-do/networks/european_migration_network/authorities/index_en.htm).

European Patrol Network, Frontex
The European Patrol Network is a network of border authorities that meet regularly to ensure synchronization and avoid duplication of work on the Mediterranean borders,
(http://frontex.europa.eu/news/european-patrols-network-and-centralised-record-of-available-technical-equipment-to-be-presented-at-tomorrow-s-jha-council-O1bOgX).

European Radiological Data Exchange Platform (EURDEP), JRC
EURDEP is a platform where un-validated radiological monitoring data from the European states is made available to the other participants, including the JRC and DG TREN,
(http://rem.jrc.ec.europa.eu/RemWeb/activities/Eurdep.aspx
http://rem.jrc.ec.europa.eu/RemWeb/activities/EmergencyMonitoring.aspx).

European Union Notification System for Plant Health Interceptions (EUROPHYT), DG SANCO
A rapid alert system connecting plant health authorities within Europe and Switzerland. It aims at intercepting new pests and diseases to plants before they are introduced and spread in Europe, and contains a notification system, a database, and produces reports regularly,
(http://ec.europa.eu/food/plant/plant_health_biosafety/europhyt/network_en.htm
http://ec.europa.eu/food/plant/plant_health_biosafety/europhyt/index_en.htm).

Europol 24/7 Operational Centre, Europol
The centre connects Europol, member states and third parties and provides information double-checking, storage of data, analysis, third party communication and support policing during major events,
(https://www.europol.europa.eu/content/page/operational-centre-1853).

Europol Analysis System (EAS), Europol
EAS is an operational information system that contains several analysis tools and centralizes and manages information contributed by Europol's stakeholders,
(https://www.europol.europa.eu/content/page/intelligence-analysis-1852).

Europol Platform for Experts (EPE), Europol
EPE are secure web platforms for specialist with different expertise to exchange knowledge, best practices and non-personal data, managed by Europol,
(https://www.europol.europa.eu/content/page/europol-platform-experts-1851;
https://www.europol.europa.eu/sites/default/files/publications/epe_leaflet_2013.pdf).

Fingerprint database (EURODAC), DG HOME
EURODAC is a central database where fingerprints of all applicants of asylum in Europe are gathered and available to all other member states handling alyssum issues. As of 2015, the database will also be available to police officers investigating criminal offences,
(http://ec.europa.eu/dgs/home-affairs/what-we-do/policies/asylum/identification-of-applicants/index_en.htm).

Frontex One-Stop-Shop (FOSS), Frontex
FOSS is a web based portal connecting Frontex, member states and some third countries. It is used by Frontex to share important documents with the rest of the participants,
(http://www.europarl.europa.eu/document/activities/cont/201008/20100805ATT79751/20100805ATT79751EN.pdf, p. 26).

Frontex Situation Centre (FSC), Frontex
The FSC's role is information management. It gathers information from Frontex' operations, provides situational monitoring, media monitoring, analyses incoming information, functions as a point of contact, and supports joint operations and crisis management,
(http://frontex.europa.eu/intelligence/information-management).

Galileo Security Monitoring Centre (GSMC), European Global Satellite Navigation System Agency GSA
Monitors threats to the Public Regulated Service, (an encrypted navigation service that provides information on location and time), and its components, administers access to the PRS and provides expertise and analysis to the PRS and Galileo services,
(http://www.gsa.europa.eu/security/gsmc).

Global Disaster Alert and Coordination System (GDACS), DG ECHO & UN OCHA
GDACS is a cooperation framework for disaster managers under the UN umbrella, and provides the worldwide virtual OSSOC real time coordination

platform. It is chaired by DG ECHO, and the JRC provides its multi-hazard disaster impact assessments,
(http://portal.gdacs.org/about).

Global flood detection system, JRC
The Global flood detection system uses satellite images to monitor floods worldwide. It is a web resource developed by the JRC and used by GDACS (see separate description),
(http://ipsc.jrc.ec.europa.eu/index.php?id=52
http://www.gdacs.org/flooddetection/).

Global Flooding Awareness System (GloFAS), JRC
GloFAS is a global forecast system that will couple weather forecasts with a hydrological model to make flooding forecast up to 2 weeks in advance. It is still only in the experimental phase,
(http://ec.europa.eu/dgs/jrc/index.cfm?id=1410&dt_code=NWS&obj_id=14760&ori=RSS).

Global Human Settlement Layer (GHSL) DG RADIO and JRC
The GHSL uses automatic information extraction from remotely sensed image data to map, analyse and monitor human settlements and urbanization globally, and to provide global human settlement descriptions.
(http://ghslsys.jrc.ec.europa.eu/).

Health Emergency & Disease Information System (HEDIS), DG SANCO
HEDIS is a web portal with restricted access aimed at providing all information necessary for the management of cross-border threats to health for DG SANCO and the national public health authorities,
(http://hedis.jrc.ec.europa.eu/LogIn/tabid/222/language/en-US/Default.aspx?returnurl=%2f;
http://ec.europa.eu/health/preparedness_response/generic_preparedness/planning/hedis_en.htm).

Health Emergency Operations Facility (HEOF), DG SANCO
Located in Luxembourg, the crisis and communication centre facility provides a 24/7 on-duty function, situational monitoring and reports, and aims to ensure coordination of all relevant actors in a health crisis. The facilities contain a crisis room, a communication room, and a multifunctional meeting room,
(http://ec.europa.eu/health/preparedness_response/generic_preparedness/planning/heof_en.htm;
http://ec.europa.eu/health/ph_threats/com/Influenza/h1n1_commission_en.htm;

http://ec.europa.eu/health/archive/ph_threats/com/preparedness/docs/heof_en.pdf).

Information and Coordination Network (ICONET), Frontex
A secure web-based network connecting Frontex and the member states' immigration liaison officers used for the exchange of information regarding irregular migration,
(http://frontex.europa.eu/assets/About_Frontex/l_08320050401en00480051.pdf).

Integrated Political Crisis Response (IPCR) Web Platform, Council Civil Protection Unit
The IPCR web platform is an information sharing tool accessible to all stakeholders of the IPCR (former CCA) crisis arrangements at the EU level. The web page will be accessible at all time, and in crises when the IPRC has been activated; ISAA reports will be available through the web platform (The EU Integrated Political Crisis Response arrangements in brief, the General Secretariat of the Council, July 2013, available at:
http://bookshop.europa.eu/en/the-eu-integrated-political-crisis-response-arrangements-in-brief-pbQC0313314/).

Integrated Situational Analysis and Awareness (ISAA), EEAS/Commission
ISAA are situational awareness reports produced jointly by the EEAS and the relevant Directorate General of the Commission to support the Presidency and Council's decision making in times of a major crisis requiring a political response from the EU (The EU Integrated Political Crisis Response arrangements in brief, the General Secretariat of the Council, July 2013, available at:
http://bookshop.europa.eu/en/the-eu-integrated-political-crisis-response-arrangements-in-brief-pbQC0313314/).

Intelligence Centre (Intcen), EEAS
Intcen serves as the intelligence hub of the EEAS, and provides civilian intelligence to the EEAS, the Commission and the Council. Also produces SIAC reports with the EU MS intelligence unit combining civilian and military intelligence, (see separate description),
(http://www.europarl.europa.eu/sides/getAllAnswers.do?reference=E-2012-006018&language=EN).

Joint Operations Reporting Application (JORA), Frontex
JORA is an information system used by Frontex and border guards of the EU member states and participating third countries where incidents are registered and validated by Frontex. JORA then produces automatically generated daily

situation reports to the Frontex Situation Centre,
(http://www.europarl.europa.eu/document/activities/cont/201207/20120725ATT49372/20120725ATT49372EN.pdf; interview 4, 2013).

Macroeconomic Imbalance Procedure (MIP), DG ECFIN
The MIP is a surveillance mechanism to prevent harmful microeconomic imbalances in the EU and Euro area. A scoreboard of 11 indicators of macroeconomic imbalances is published annually indicating what countries require in-depth studies, and can be followed by preventive recommendations and corrective enforcement,
(http://ec.europa.eu/economy_finance/economic_governance/macroeconomic_imbalance_procedure/index_en.htm).

Maritime Analysis and Operations Centre - Narcotics (MAOC-N)
Initiated by 7 EU member states and with financial support from the DG HOME, the MAOC-N is a law enforcement unit with military support that coordinates maritime and aviation intelligence, with the aim of suppressing illicit drug trafficking,
(http://www.maoc.eu/who.php).

Maritime Support Services Centre, EMSA
The Maritime Support Services Centre is the operations room of the EMSA. They provide support and monitor the SafeSeaNet, the EU LRIT CDC, CleanSeaNet and other systems,
(http://www.emsa.europa.eu/mss-operations-centre.html).

Marsur, European Defence Agency
Marsur is an emerging network to connect naval and maritime information exchange systems, and thereby avoid duplication. It aims at improving information and data exchange for the maritime CSDP missions and is envisaged to be connected to the Common Information Sharing Environment (described above),
(https://www.eda.europa.eu/docs/eda-factsheets/marsur-factsheet-v2_09102012_cs5_bleu).

Medical Intelligence System (MedISys), JRC
MedISys is a news aggregation and analysis system developed by the JRC, and uses the same structure as the European Media Monitor News brief system. MedISys produces real-time news alerts on medical and health related topics, and daily emails and reports to its subscribers,
(http://emm.newsbrief.eu/overview.html).

ODIN, EEAS
ODIN is a software tool to gather open source information with a website monitoring function used by the EEAS. It is undergoing some updates, and will probably be renamed,
(http://www.ifp-ew.eu/pdf/201201IfPEWEUEWERPostLisbon.pdf p. 10 interview 11, 2014).

Radicalisation Awareness Network (RAN), DG HOME
RAN is a network of local first-line practitioners (including researchers and NGO's) to facilitate the exchange of information and best practices to prevent radicalization and to fight terrorism and extremism,
(http://ec.europa.eu/dgs/home-affairs/what-we-do/networks/radicalisation_awareness_network/index_en.htm).

Rapid Alert System for Biological and Chemical Attacks and Threats (RAS-BICHAT), DG SANCO
RAS-BICHAT is a rapid alert system between DG SANCO and the national designated competent authorities for the purpose of information exchange and coordination of measures on the deliberate release of chemical, biological and radiological agents,
(http://ec.europa.eu/health/preparedness_response/generic_preparedness/planning/rapid_alert_en.htm).

Rapid Alert System for Food and Feed (RASFF), DG SANCO
RASFF is a rapid alert system connecting DG SANCO, the European Food Safety Authority (EFSA), surveillance authorities in the member states and in the European Free Trade Association (EFTA) member states. It is used to exchange information on what measures have been taken as response to serious threats to health relating to food and feed. It also contains a database of old notifications,
(http://ec.europa.eu/food/food/rapidalert/index_en.htm).

Rapid alert system for non-food dangerous products (RAPEX), DG SANCO
Based on a Directive, the MS are obliged to report to the Commission DG SANCO on what measures they have taken to prevent or restrict the marketing or use of a product posing serious threats to consumer's health and safety. DG SANCO then distributes this information to all other member states,
(http://ec.europa.eu/consumers/safety/rapex/index_en.htm;
http://ec.europa.eu/consumers/safety/rapex/how_does_it_works_en.htm
http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32001L0095:EN:HTML).

Rapid Alerting System for Chemical Health Threats (RAS CHEM), DG SANCO
RAS CHEM is a rapid alert system aimed at addressing information exchange on incidents including chemical agents. It will connect national chemical agencies, but is not yet implemented,
(http://ec.europa.eu/health/preparedness_response/generic_preparedness/planning/rapid_alert_en.htm
http://asht.eu/).

Risk Analysis Unit, European Network and Information Security Agency ENISA
Within its threat and risk analysis activities, ENISA gathers open source intelligence, analyses it, and issues yearly threat reports but also flash notes when something big has happened. They are non-operational, and analysis done is based on publicly reported incidents. Based on this information ENISA often proposes courses of actions towards reducing threat exposure (interview 12, 2013).

SafeSeaNet, EMSA
SafeSeaNet is a centralized vessel traffic monitoring platform linking maritime authorities from the EU, Norway and Iceland to exchange data on ships, ship movement and hazardous cargoes for maritime, port and environmental safety and security,
(http://emsa.europa.eu/operations/safeseanet.html).

Satellite Centre (Satcen)
SatCen produces geospatial intelligence and imagery intelligence mainly to support decision-making within the Common Foreign and Security Policy (CFSP). Uses imagery from national and commercial providers and has developed several different tools for imagery analysis, data acquisition and sharing, including SnapIT GEO, Web GeoPortal and the Download Central,
(http://www.satcen.europa.eu/images/stories//eu%20satcen%20annual%20report%202012.pdf pp. 9f, 25ff).

Schengen Information System (SIS I & II), DG HOME
Originally established under the Schengen Convention, SIS has since been incorporated within the EU framework, and is used by inter alia border guards, police and customs throughout the Schengen area. SIS holds information on stolen goods and missing or wanted persons, and SIS II is an updated version including biometrics and the possibility to link different alerts,
(http://ec.europa.eu/dgs/home-affairs/what-we-do/policies/borders-and-visas/schengen-information-system/index_en.htm).

Secure Information Exchange Network Application (SIENA), Europol
SIENA is a secure communication, information and intelligence sharing tool connecting EUROPOL, the member states and third countries with cooperation agreements,
(https://www.europol.europa.eu/content/page/siena-1849).

Shared Environmental Information System (SEIS), European Environment Agency EEA
SEIS is an EU-wide information system to share environmental data and information from existing systems aimed at improving the collection, exchange and use of this data,
(http://www.eea.europa.eu/about-us/what/shared-environmental-information-system-1).

Single Intelligence Analysis Capacity (SIAC), EEAS MS Intelligence and Intcen
Reports produced by Intcen and EU Military Staff Intelligence Unit jointly, thereby combining civilian and military intelligence,
(http://www.eeas.europa.eu/csdp/documents/pdf/finalproof-impetusn9_en.pdf p. 16).

Situation Room, EEAS
The Situation Room is a stand-by body of the External Action Service, providing worldwide monitoring, situational awareness and situation/flash reports around the clock. It also functions as a switch board and point of contact for all crisis related issues, and will participate in the Integrated Political Crisis Response mechanism when activated,
(http://www.eeas.europa.eu/crisis-response/what-we-do/eu-situation-room/index_en.htm).

Strategic Analysis and Response Centre (STAR), DG HOME
STAR functions as a crisis centre and a risk analysis methodology provider. It conducts situational monitoring, but depends on intelligence from others, e.g. Intcen or Europol for terrorism and Frontex for external border crises to produce any situational awareness during a crisis (interview 13, 2013).

Systemic Model of Banking Originated Losses (SYMBOL), JRC
SYMBOL is a statistical model developed by the JRC for the Commission DG MARKT to assess the consequences of bank failures in EU countries, and thereby reduce the risk of systemic banking crises,
(http://ec.europa.eu/dgs/jrc/downloads/jrc_2012_financial_stability_scientific_support_en.pdf).

Tarîqa, EEAS Situation Room
Tariqa is an intelligence platform for open source intelligence developed by the DG RELEX of the Commission, and now managed by the EEAS Situation Room (interview 14, 2013).

The European Surveillance System (TESSy), ECDC
TESSy is a database managed by the ECDC, where member states voluntarily report in national data. This data is then used for documentation and long term reports (interview 5, 2013).

Threat Tracking Tool (TTT), ECDC
The TTT is an internal database in which the Epidemic Intelligence Unit of the ECDC work to produce reports and to produce basis for decisions. It contains past and current events, sources of information and what actions that have been taken (interview 5, 2013).

Water level forecast system (LISFLOOD), JRC
LISFLOOD is a GIS-based model developed by the JRC and used to simulate hydrological processes and thereby assess the potential impact of changes in hydrological flows,
(http://floods.jrc.ec.europa.eu/flood-research-at-jrc.html
http://floods.jrc.ec.europa.eu/lisflood-model.html).

Vessel Detection System (VDS), JRC
The VDS is a tool for fishery enforcement, where all EU vessels measuring over 15 meters are obliged to carry a Vessel Monitoring System Box (with a GPS-transmitter), so that its location can be verified, and thereby ensure its compliance with fishery regulations,
(http://ipsc.jrc.ec.europa.eu/fileadmin/docs/JRC58358.pdf).

Visa Information System (VIS), DG HOME
VIS is a central IT-system processing biometric data and information on visa applications, and it can also perform biometric matching. It connects all Schengen member states, their border crossings and consulates with the aim of fighting abuses, helping with asylum applications and enhancing security,
(http://ec.europa.eu/dgs/home-affairs/what-we-do/policies/borders-and-visas/visa-information-system/index_en.htm).

Annex III. Methodological questions for mapping exercise and case studies

Questions for inventory input – table:

1. Ownership: Who owns the tool (i.e. institutional location)?
2. Purpose: What is the purpose of the tool?
    a. Preparation and/or response?
    b. Collect and/or analyse and/or share/communicate?

Questions for case studies:

1. Ownership: Who owns the tool (i.e. institutional location)?
2. Purpose: What is the purpose of the tool?
    a. Preparation and/or response?
    b. Collect and/or analyse and/or share/communicate?
3. Users: Who are the main users of the tool – internal (EU institutions/agencies) and/or external (MS institutions/agencies, other)?
    a. Collect (who feeds information into the system)?
    b. Analyse (who analyses information)?
    c. Share/communicate (who distribute/receives information?)
4. Method: What kind of method is used?
    a. Collect (e.g. automated vs. manual; webpost/email/sms…)
    b. Analyse (e.g. quantitative/qualitative…)
    c. Share/communicate (e.g. automated vs. manual; webpost/email/sms…)
5. Tool characteristics:
    a. Year of establishment?
    b. Who developed the tool?
6. Crisis characteristics:
    a. Known unknowns or unknown unknowns?
    b. External/internal?
7. Coverage:
    a. Sectoral or general?
    b. If sectoral – which sector/sub-sector?
8. Activation:
    a. When was the last time the tool was activated?
    b. Is the tool activated regularly? (Yearly, monthly/weekly/daily…)

9. Access:
    a. Is the tool open or closed (i.e. membership requirements apply)?
    b. If closed – trained officials only or other categories?
    c. If closed – institutions/agencies within the EU system (internal) vs. Institutions/agencies in MS (external) and/or other
10. Overlaps:
    a. Similar international (or regional) systems?
11. Evaluation: Has the tool been evaluated?

Making Sense of Sense-Making: The EU's Role in Collecting, Analysing, and Disseminating Information in Times of Crisis

In an era of transboundary crises, Europe faces the daunting challenge of coordinating joint responses in an effective and timely way. Recent transboundary crises such as the Icelandic Ash Cloud (2010), food contamination incidents and the financial breakdown revealed a key part of that challenge: sifting through relevant information, building an accurate picture of what is happening, and communicating that analysis to political decision-makers. Academic researchers refer to this process in terms of 'sense-making'. To create joint capacity for sense-making is one of the prominent elements of the EU's ambitions to play a role in the management of transboundary crises. The number of early-warning, rapid-alert, and common communication platforms in the EU has multiplied in recent years but with little central guidance or overall rationale.

This report tries to 'make sense of sense-making' tools in the EU by providing the most comprehensive overview to date. We ask what sense-making tools are available at the EU level, document what they are intended to do, and explore what these tools offer in terms of 'added-value' to European states. Using official documents, secondary literature and interviews with policy officials, this report maps the sense-making landscape of the EU. After drawing out key patterns and offering an inventory of tools relevant to sense-making, we conclude by discussing the problems and prospects of the EU's role.

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