The borders of Europe have always been subject to negotiation. While the Treaties of Osnabrück and Münster still assigned political authority by listing in detail the lands and cities that would fall under a particular reign, the Congress of Vienna led to the establishment of the territorial principle and hence to the congruency of the concepts of rights, territory, society, and state. Various aspects of globalization are now scratching the container of the modern nation-state with its territorial borders. It is in this context that Europe – as a political actor – is once again faced with the challenge of re-bordering.

This contribution deals with a technically mediated arena in this process of re-bordering, namely with the European Border Surveillance System, EUROSUR. EUROSUR establishes a network through which border-related information, collected by individual member states, partner organizations, and surveillance gadgetry is gathered, processed, and exchanged. The diverse information – risk analyses, geodetic data, daily news reports, police information, and (virtually real-time) surveillance data – from various sources and sections along the EU’s external borders is used to create a common European situational picture (ESP) concerning the overall situation at the external borders of the EU. The resulting ESP is, in turn, passed on to the member states by means of the same information and communications technology (ICT) infrastructure, i.e. the EUROSUR network. By establishing and standardizing the exchange of information among EU member states, the EUROSUR network institutes a supranational, i.e. a European, external border.

Yet, while border management in Europe is based on the notion of a supranational EU external border, the mandate to control parts of that border rests with the individual member states. The EUROSUR network mediates this tension between management and mandate. It does so by standardizing the exchange of information for the purpose of creating a common situational picture.

The development and establishment of this European communication schema involves the parallel development of technology and legislation, i.e. the formulation of a European regulation on EUROSUR, on the one hand, and a ICT system based on a geographic information system (GIS) – the EUROSUR network – on the other. Consequently, this contribution deals with EUROSUR in terms of the interplay between the development of the technology and the lawmaking process. These interlocking developments are shaped by processes of computerization, standardization, and virtualization. It
is only possible to make qualitative assessments of a common EU external border following a description of these intermeshing and mutually reinforcing processes.

From the EUROSUR Roadmap to the EUROSUR Regulation: What Is the Technology of the “Technical Framework”?  

On 13 February 2008, the European Commission presented what is known as the “Border Package”. The Border Package consists of three communications containing detailed plans for bringing forward integrated border management (IBM) in Europe.1 One of these communications, concerning the creation of a European Border Surveillance System (EUROSUR), and hereafter referred to as the “EUROSUR Roadmap”, describes potential elements of a reconfiguration and reorganization of border management itself. It underscores the necessity of making use of synergies in surveillance technology and sharing information to prevent “unauthorised border crossings, to counter cross-border criminality and to support measures to be taken against persons who have crossed the border illegally”.2 Almost four years later, on 12 December 2011, the European Commission proposed the EUROSUR draft regulation.3 At this point, the member states were called upon to clarify the issue of subsidiarity, i.e. to determine in their own parliaments whether the EU had competency in this area.4 After the Council of the European Union and the European Parlia-

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1 As well as plans for a European border surveillance system, the Commission also presented the findings of an initial evaluation of the European Agency for the Management of Operational Cooperation at the External Borders of the Member States of the European Union (Frontex), and proposals based on these results for the strengthening of Frontex’s competencies and resources. A further communication called for the creation of an entry/exit registration system. Cf. Commission of the European Communities, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, Report on the evaluation and future development of the FRONTEX Agency, COM(2008) 67 final, Brussels, 13 February 2008; Commission of the European Communities, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, Examining the creation of a European Border Surveillance System (EUROSUR), COM(2008) 68 final, Brussels, 13 February 2008 (hereinafter cited as “EUROSUR Roadmap”); Commission of the European Communities, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, Preparing the Next Steps in Border Management in the European Union, COM(2008) 69 final, Brussels, 13 February 2008.

2 EUROSUR Roadmap, cited above (Note 1).


4 Cf. Article 5 (3) of the Treaty on European Union (TEU) and the Protocol on the Application of the Principles of Subsidiarity and Proportionality. In the case of the proposed EUROSUR regulation, only the Swedish parliament had concerns regarding the competency of the EU.
ment had determined their positions, the “trialogue” between Council, Parliament, and Commission was inaugurated under the presidency of Cyprus, with the ultimate aim of adopting the regulation by October 2013. On 10 October 2013, the EUROSUR regulation was approved by the European Parliament by 479 votes to 101, with 20 abstentions. The Council of the European Union then adopted the regulation on 22 October 2013 without discussion. It entered into force on 2 December 2013.

In the EUROSUR Roadmap of 13 February 2008, EUROSUR is described as a “common technical framework”, whose aim is to support Member States’ authorities to act efficiently at local level, command at national level, coordinate at European level and cooperate with third countries in order to detect, identify, track and intercept persons attempting to enter the EU illegally outside border crossing points.

If one looks at the levels at which EUROSUR seeks to improve border protection – reaction capability at local level, allocation of resources and personnel at national and European planning levels, and facilitating inter-organizational information sharing and co-operation with third countries – the political and geographic reach of the EUROSUR integrated border surveillance system is remarkable.

The publication of the Roadmap in February 2008 was followed by a period during which political and technical feasibility studies were carried out. The Roadmap explicitly invited research and development on border surveillance within the framework of the Seventh Framework Programme for Research and Technological Development (FP7). By 2012, the EU had provided funding worth over 170 million euros to 16 projects that promised synergies with the EUROSUR system. These include the development and testing of unmanned aerial vehicles (UAV) and satellites for use in civil-security applications. During this period, public discussion focused on EUROSUR...
as a contribution to the expansion of surveillance at Europe’s external borders and as an indirect means of subsidizing the arms industry.

Yet neither the two EUROSUR pilot projects nor the Commission’s legislative proposal of 12 December 2011 are concerned with the apparatus of border surveillance technology. Their focus is rather the establishment of a communication platform that regulates the exchange of information via standardized solicited input and representation of data. Merely criticizing EUROSUR as a surveillance behemoth overlooks the changes that an “intelligent information system” brings at the inter-organizational and administrative levels. In fact, the EUROSUR project aims to achieve the goals detailed above less by reinforcing the EU’s external borders than by means of inter-organizational co-operation and information sharing. The EUROSUR network is the implementation of the latter. The visualization in a common European situational picture of data captured nationally is supposed to provide an image of the added value of information sharing. This visualization lends plausibility to the idea of integration – i.e. the Europeanization of border management.

As EUROSUR has evolved, the common ESP has thus moved to the centre of attention. The ESP displays the data gathered from various sources on a map of Europe. The EUROSUR network is based on ICT and uses a GIS to turn data gathered intermittently into situational pictures in the form of electronic maps. The development of the software began in 2010 and is linked to the two pilot projects. Structures and definitions that proved themselves in the software’s test phase were included in the legislative proposal. Consequently, the EUROSUR regulation covers the composition of situational pictures, the necessary communication routines to stipulate the network, as well as the final ESP. The EUROSUR regulation also touches upon the competencies and hierarchies within the network; it proposes a schema for a supranational, i.e. European management of borders.


12 In December 2009, a small EUROSUR network pilot project began with the participation of Finland, France, Italy, Poland, Slovakia, and Spain. The second pilot phase, which began in November 2010, has seen additional member states successively join the original six. Participation in the pilot is conditional on the existence of a national coordination centre (NCC). A memorandum of understanding (MoU) between Frontex and the individual member states governs further details of the pilot project, but is not in the public domain. Frontex engaged the Spanish company GMV to carry out technical implementation of the network. The contract with GMV is worth 1.5 million euros. Cf. European Commission, Commission Staff Working paper, Impact Assessment accompanying the Proposal for a Regulation of the European Parliament and of the Council establishing the European Border Surveillance System (EUROSUR), SEC(2011) 1536 final, Brussels, 12 December 2011.
One requirement for being connected to the EUROSUR network is the restructuring of national authorities.\textsuperscript{13} It can also be assumed that the introduction of such a technologically advanced and proactive approach will lead to a shift in the everyday working practices of border protection.\textsuperscript{14} Furthermore, the information to be exchanged via the network will also be aggregated and analysed centrally, which points to an increase in competencies on the part of the Frontex agency.

\textit{The EUROSUR Network and the Classification of Network Data – The Interplay of Computerization and Europeanization}

The EUROSUR regulation defines the communications routines that are necessary for the creation of a common European situational picture at the EU’s external borders. Article 4 (1) details the components of the EUROSUR framework as follows:

For the exchange of information and for the cooperation in the field of border surveillance, and taking into account existing information and cooperation mechanisms, Member States and the Agency shall use the EUROSUR framework, consisting of the following components:

(a) national coordination centres;
(b) national situational pictures;
(c) a communication network;
(d) a European situational picture;
(e) a common pre-frontier intelligence picture;
(f) a common application of surveillance tools.\textsuperscript{15}

The national coordination centres (NCC) are the central location for European border management in each member state. They are to assume responsibility for communication and co-ordination with the European Agency for the Management of Operational Cooperation at the External Borders of the Member States of the European Union (Frontex) and the other member states. This organizational change turns border management into a supranational concern. Each NCC creates a national situational picture by entering infor-

\textsuperscript{13} The establishment of a single NCC in each member state is a direct consequence of the recommendations made in Frontex’s 2007 BORTEC study, which called for the streamlining of border protection authorities in the individual member states.

\textsuperscript{14} On proactive border management, which has been advanced, in particular, via concepts of a common pre-frontier intelligence picture (CPIP), cf. Julien Jeandesboz, Beyond the Tartar steppe: EUROSUR and the ethics of European border control practices, in: J. Peter Burgess/Serge Gutwirth (eds), \textit{A Threat Against Europe? Security, Migration and Integration}, Brussels 2012, pp. 111-131.

\textsuperscript{15} EUROSUR Regulation, cited above (Note 8), Article 4 (1).
mation into the EUROSUR application.\textsuperscript{16} This information is shared with Frontex via the network. Frontex, in turn, integrates this data with the common pre-frontier intelligence picture (CPIP)\textsuperscript{17} to create a European situational picture.\textsuperscript{18} Each situational picture consists of three layers. Article 8 (2 a-c) of the regulation distinguishes between the events layer, the operational layer, and the analysis layer. The CPIP provides the member states with considerable added value, giving them an incentive to enter the information that they possess in order to receive more information in return, particularly from the pre-frontier area.

The centre of the EUROSUR graphical user interface (GUI) consists of an outline of the European continent in white on a light-blue background. This acts as a kind of “pinboard” to which information can be added to a given geographical location in the form of “tags” that include various expandable data fields. The EUROSUR GUI is used for both entry and retrieval of information. Menu items include options for the standardized entry of information and for search filtering.

The information to be entered is categorized according to various types of border-related incidents. Meetings of ministers and working groups defined what kinds of incidents were relevant for EU border management; i.e. which incidents were not merely local phenomena but should be considered a problem for the EU’s Schengen Area. The result of these discussions is the “incident catalogue”. The incident catalogue is translated into menu items in the EUROSUR GUI. In this way, the implicit consensus reached on what counts as a border-related incident is reflected in the classification of network data.\textsuperscript{19} Thus, the classification of border-related incidents is translated into IT classifications which in turn consolidate the political agreement by structuring the communication routines between border control authorities in Europe.

To enter information on an incident, the user chooses the appropriate category and uses an electronic form to make an incident report. The information entered is generally shared with Frontex, where it is used for risk analysis.

\textsuperscript{16} For details of the content and the various layers and sub-layers of the national situational picture, cf. ibid., Article 9.
\textsuperscript{17} For details of the content and the various layers and sub-layers of the CPIP, cf. ibid., Article 11.
\textsuperscript{18} For details of the component data and the organizational layers of the European situational picture, cf. ibid., Article 10.
\textsuperscript{19} Consequently, the events layer of the national situational pictures consists of the following four sub-layers:

- (a) a sub-layer on unauthorised border crossings, including information available to the national coordination centre on incidents relating to a risk to the lives of migrants;
- (b) a sub-layer on cross-border crime;
- (c) a sub-layer on crisis situations;
- (d) a sub-layer on other events, which contains information on unidentified and suspect vehicles, vessels and other craft and persons present at, along or in the proximity of, the external borders of the Member State concerned, as well as other event which may have a significant impact on the control of the external borders”; ibid., Article 9 (3 a-d).
The standardization of information specifications and processing via the EUROSUR network has created new, EU-wide ways of understanding Europe’s border regions. Not only are certain types of incident defined as relevant in terms of EU or Schengen standards, member states are also required to assign each incident an “indicative impact level, ranging from ‘low’ and ‘medium’ to ‘high’”\(^{20}\). The assignment of impact levels is monitored by Frontex (consistency check) and aggregated so that specific border sections can be marked in colour in the European situational picture according to the impact level and frequency of incidents. Sections where incidents with a high impact occur are coloured red; sections with medium-impact events are yellow, and sections with low-impact events are green. Ultimately, this colour-coding may provide for a supranational mandate, which can also be read on the electronic map.\(^{21}\)

By structuring the communication and representation of data, EUROSUR enables the integration of European border management. By requiring the definition and dissemination of technical standards, the network has become the technical arena for and means of Europeanization. There are many reasons why EUROSUR has been accepted by EU member states since 2010, and why its use appears to be becoming established. One is that it embodies the concept of the virtual border, which has been a buzzword since 2003, i.e. since before the drafting of the EUROSUR Roadmap. This concept is echoed in the virtual EUROSUR network, and further reflected in the representation of a broad variety of data in the European situational picture. This interplay between virtualization and computerization is the subject of the following section.

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\(^{20}\) Ibid., Article 9 (4).

\(^{21}\) Cf. ibid., Article 15 (1 c).

The Leitbild concept makes clear how EUROSUR can function as a technical framework. It explains, first, why it is accepted by the member states, and, second, why EUROSUR set changes in motion that had previously failed to find a supranational consensus.

Ortmann et al. define Leitbilder or “put more generally, interpretive schemas” as “‘tools’ that agents make use of to interpret their world and for purposes of communication”. Ortmann et al. define Leitbilder as “tools’ that agents make use of to interpret their world and for purposes of communication”. Leitbilder may be vaguely worded, but they are capable of creating consensus. They make it possible to speak about a shared conception that has not yet taken on a specific form, and whose precise significance only becomes evident at a later date. Nonetheless, the agents – whether at the level of management, production, or in the world of politics – cannot simply choose a Leitbild out of thin air. They are not arbitrary linguistic images and cannot be mobilized on an ad hoc basis to achieve a desired political outcome. Rather, Leitbilder serve to provide structure, particularly with regard to the cognitive and normative acts of alignment that are necessary to promote the dissemination of the Leitbild, thereby encouraging its acceptance and functioning. A Leitbild, as the etymology of the German suggests, is a “guide” that influences the development process, while also remaining – the other half of the German word’s meaning – “pictorial” or “imagistic”, and thus open to reinterpretation, extension, adaptation. Ortmann et al. define Leitbilder as “pictorial interpretive and normative schemas that are ‘abstracted’ from a cognitive and/or normative structure, which is thus both reproduced and adapted”. Accordingly, even when formulated as a utopia, a Leitbild can still have an effect by providing the management of an organization with inspiration. In this way, Leitbilder address and delineate both the problem and potential solutions. Once admitted to a discourse as a structuring instance and reproduced in a field, they can be supplied with alternative meanings and used in flexible ways.

The concept of the virtual border was already being circulated five years before the Commission released the EUROSUR Roadmap. It first appears in a 2003 study carried out by the French think tank CIVIPOL. In November of the same year, it was taken up by the Council of the European Union in its “Programme of measures to combat illegal immigration across the maritime borders of the Member States of the European Union”, which states:

The programme adopts the concept of the virtual maritime border in order to reinforce the legal borders of Member States by means of joint

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23 Ibid., p. 8 [author’s translation].
24 Cf. ibid., p. 62.
25 Ibid., p. 439.
operations and specific measures in the places where illegal migratory flows originate or transit.27

Linking the concept of the virtual border to the idea of a maritime border made it possible to open up the idea of precise territorial borders in their spatial dimension and introduce geographical ambiguity. This makes it possible to carry out the classical tasks of border protection and border control beyond the frontier. In this connection, Ben Hayes comments: “The underlying principle is that the EU’s ‘sea border’ extends to any country with which it shares an ocean, basically giving it the right to police the entire sea.”28 The ambiguity and invisibility of this border establish a grey area that is deeply problematic but tolerated politically because it opens up the (national) mandate in both geographical and institutional terms. The similarity of connotations of the concepts of the sea and virtuality lends plausibility to the concept of a virtual maritime border. At the same time, this transforms the problem of migration across the maritime frontier of the Mediterranean by introducing the concept of flexible borders, which more closely corresponds to the experiences of both border services and migrants and is consequently gaining favour.

A further reinterpretation or extension of the meaning of the concept of the virtual border is also evident in the EU’s 2008 Border Package. The re-orientation of border management initiated in those documents reframed the concept of the virtual border in terms of data gathering and border management driven by investigation and prevention. The concept of the virtual border is linked to an intelligence-driven approach to border management. In an article in “Focus”, the in-house magazine of the AeroSpace and Defence Industries Association of Europe (ASD), Ilkka Laitinen, the Director of Frontex, explicitly referred to the necessity and effectiveness of the concept of the virtual border:

In the 21st century border management must be intelligence-driven. This is a prerequisite of all actions taken regarding borders. Effective border management does not exist without sophisticated systems of data collection and analysis followed by its timely dissemination to officers making decisions on the ground, such as the eligibility for crossing of a person or cargo. […] That’s why the concept of a “virtual border” is so important, because the management of a border starts even while

gathering intelligence or issuing a visa in a third country. The physical border is, so to say, the “last border line”.

Gathering, aggregating, and evaluating data is the basis for the distribution of resources and personnel along a frontier, but also for individual checks and other measures carried out by border service staff. Border service personnel on the ground should base their actions on up-to-date information from databases rather than heuristic talent – arriving at suspicion on the basis of experience and intuition.

The concept of analytical and preemptive border management that must be distinguished from the classical preventive approach depends on the development of a situational picture of the pre-frontier area. Accordingly, only information that indicates a potential border violation should be included in the CPiP, as only this information is crucial to the ability of border service staff to react. However, the pre-frontier area lies outside the area in which (European) border service staff are able to exercise sovereign authority. The virtuality of the CPiP undercuts this limitation by shifting the locus of border security to a non-territorial space, namely in the virtual sphere of data collection and analysis. This data-gathering and analysis process, which is based on intelligent information systems, then feeds into the common European situational picture via the CPiP. The EUROSUR network, a GIS-supported virtual ICT network that enables the creation of the ESP on the basis of information exchange, ultimately manifests the guiding model of a virtual border.

At this point, an observation by Ortmann et al. is particularly relevant. The authors conclude that “Leitbilder […] are almost automatically associated with new technology, particularly information technology. A new solution means: A new IT-based solution.” The Leitbild is thus not only made manifest and concrete in the form of technology, the virtual network is the medium for the creation of a new spatial border. Operations are no longer based on the geographical frontiers measured by land surveyors, but rather on border-related incidents that are already relevant for border management in the pre-frontier area. The virtual border has made possible new ways of dealing with the border mandate, which continues nonetheless to justify intervention by executive organs in terms of territorial integrity without binding the executive forces to the territory itself. At the same time, however, legal titles and jurisdiction for unauthorized migrants or refugees are reserved.

The digital map visualizes the concept of a European external frontier that is characterized by the concept of virtuality. The Leitbild is made mani-

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30 Ortmann et al, cited above (Note 22), pp. 442-443 [author’s translation; emphasis added].
fest by means of technology, and, as a result, the electronic map (the collective product of the virtual EUROSUR network) ultimately itself becomes a *Leitbild*. In this way, the process of deploying a new technology leads to an interplay between the establishment of the technology itself and the ongoing Europeanization of border management. The acceptance of the *Leitbild* and thus, via the medium of technology, of the associated Europeanization, is consolidated by the visualization of the ESP. This is well illustrated by the words of a border official who has been working with the network in the pilot project: “When I first saw the EUROSUR on the screen, I finally understood what it was all about.”

What Will EUROSUR Change about Integrated Border Management in Europe?

The mutually reinforcing interplay between computerization, standardization, and virtualization in the EUROSUR network are leading to the emergence of an external EU border. The development of the network that, along with the relevant EU regulation, has organized border management in Europe in a binding fashion, makes possible, on the basis of the relevant technology, a degree of Europeanization and integration that would have been unthinkable only ten years ago.

The EUROSUR network promotes new formats for communication while encouraging information exchange and interorganizational cooperation. At the same time, the use of its enabling application might rapidly make these changes permanent. Europe’s external frontier is thus being created by means of interorganizational co-operation and data exchange. As this takes place, the frontier region is also being restructured in political and administrative terms. In this, the function of technology is not only to measure and to represent (instrumentally), but is rather the concrete embodiment of political will, the sui generis motor for harmonization of EU border management and border demarcation. The computerization of border surveillance, and, indirectly, of border demarcation, makes the standardization and virtualization of a European border model plausible.

In terms of the demarcation and operationalization of borders, a situational picture creates possibilities that go beyond the possibility of cross-border hot pursuit up to 30 km in cases of justified suspicion. The exchange of information regarding border-related incidents at the EU’s common borders and the collection and representation of this information in a situational picture not only make proactive border management possible but make a visual suggestion that some course of action should be undertaken even by those who are not yet (geographically) responsible. The pre-frontier intelligence picture contained within the ESP implies that those involved in using EUROSUR are engaged in proactive border management.
Correspondingly, the EUROSUR project is premised on the argument that enhanced co-operation and information exchange between EU member states and EU authorities will lead to better results in investigations and more efficient border protection and will be able to make a decisive contribution to the rescue of migrants in distress at sea. Michele Cercone, spokesperson of EU Commissioner for Home Affairs Cecilia Malmström, agrees: “We need Eurosur, because we realised in the last years that we do already have a lot of information, very worthy information that is not shared. Not only between member states, but between national authorities themselves.”32

In evaluating EUROSUR, it is important to bear in mind the premise that improved information flow and reaction times will raise the quality of border management. For, to consider just the example of maritime rescue, it is questionable whether the number of deaths at sea can really be explained as the result of a lack of information (flow),33 and hence could be reduced by better communication. Not every EU member state takes the view that EUROSUR should be used as a multi-purpose system, i.e. both for detecting unauthorized immigrants, preventing cross-border crime, and carrying out border patrols, and in the co-ordination of maritime rescue operations. Furthermore, the EU member states do not share a generally accepted definition of maritime distress. Hence, one passage may state that every small wooden boot on the high seas should be treated as a case of maritime distress, as such craft are simply unsuited for the likely conditions, while another passage states that one should only speak of maritime distress when a ship or boat actually sinks. Nonetheless, “maritime distress” was included as a category in the catalogue of border-related incidents and can be selected in the EUROSUR GUI. In this case, the agreement on the form was reached before consensus on the content. This shows that the format clearly has the potential to encourage further harmonization.

Aside from this question of political will, the “technical argument” that supposes EUROSUR will enable the rescue of migrants at sea by making it possible to find them more quickly is also questionable. If it is to provide early warning, the information needs to be made available almost in real time. In the test phase, however, it was considered a success if a report of an incident was entered into the system on the same day. Furthermore, the operational layer, which provides the most up-to-date information, where applicable, is so far only accessible by management and not staff working on the ground. The formalization and standardization of communication pro-


33 Cf. Klepp, cited above (Note 31).
cesses and information exchange appear to be more important than the acceleration of data flow.\textsuperscript{34}

In general, the EUROSUR technical framework has a Europeanizing effect that it realizes via IT-based formats for communication. Whether this improves border management depends on whether the network is accepted. Which itself, paradoxically, depends on whether the interests of the member states are served. And while EUROSUR is supposed to increase situational awareness of border authorities in Europe, some member states fear that this awareness will also reveal situational failure. Under these circumstances, it is unlikely that the EUROSUR network will unfold its potential as a multi-purpose system, even if this would be technically possible.

\textsuperscript{34} Cf. Nils Ellebrecht/Konrad Feldmeier/Stefan Kaufmann, IT’s about more than speed. The impact of IT on the management of mass casualty incidents in Germany, in: Tina Comes/Frank Fiedrich/Stephen Fortier/Jutta Gelderman/Tim Müller (eds), Proceedings of the 10th International Conference on Information Systems for Crisis Response and Management (ISCRAM), Baden-Baden, May 2013, pp. 391-400.