D6.1 Observational studies methodology and research framework

Document Due Date: 30/09/2018
Document Submission Date: 31/10/2018

Work Package 6: Operational Methods and Acceptability

Document Dissemination Level: PU
Abstract

This deliverable outlines the methodological plan and research framework for WP6, T6.1 “Operational observation studies for validating and supporting CONOPS definition”. An overview of the theoretical foundations is discussed in section 2 as a source of the key questions which will be asked of the operational context during the course of the empirical research work. This constitutes a framework that merges the organizational aspects of planned operations with the perspective of emergent, contextual, individual activity.

The merging of both the top-down and bottom up accounts constitutes the methodological plan for the development of the concept of operations (CONOPS) for TRESSPASS. The CONOPS involves the combination of standard approaches to system description with critical reflection from social scientific theory, with the ultimate goal of supporting design.

The use of process mapping (paper-models) and swim lanes will be a technique for engaging in collaborative dialogue towards this end.
### Project Information

<table>
<thead>
<tr>
<th>Project Name</th>
<th>robust Risk based Screening and alert System for PASSengers and luggage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Acronym</td>
<td>TRESSPASS</td>
</tr>
<tr>
<td>Project Coordinator</td>
<td>National Center for Scientific Research “Demokritos”, EL</td>
</tr>
<tr>
<td>Project Funded by</td>
<td>European Commission</td>
</tr>
<tr>
<td>Under the Programme Call</td>
<td>Horizon 2020 Secure Societies</td>
</tr>
<tr>
<td>Topic</td>
<td>H2020-SEC-2016-2017 (SECURITY)</td>
</tr>
<tr>
<td>Grant Agreement No.</td>
<td>Innovation Action</td>
</tr>
<tr>
<td></td>
<td>787120</td>
</tr>
</tbody>
</table>

### Document Information

<table>
<thead>
<tr>
<th>Document reference</th>
<th>D6.1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Document Title</td>
<td>Observational studies methodology and research framework</td>
</tr>
<tr>
<td>Work Package reference</td>
<td>WP6</td>
</tr>
<tr>
<td>Delivery due date</td>
<td>30/09/2018</td>
</tr>
<tr>
<td>Actual submission date</td>
<td>31/10/2018</td>
</tr>
<tr>
<td>Dissemination Level</td>
<td>PU</td>
</tr>
<tr>
<td>Author(s)</td>
<td>Michael Cooke (NUIM)</td>
</tr>
<tr>
<td>Contributor(s)</td>
<td></td>
</tr>
<tr>
<td>Document Review Status</td>
<td></td>
</tr>
</tbody>
</table>
## List of Acronyms and Abbreviations

<table>
<thead>
<tr>
<th>ACRONYM</th>
<th>EXPLANATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONOPS</td>
<td>CONCEPT of Operations</td>
</tr>
<tr>
<td>EC</td>
<td>European Commission</td>
</tr>
<tr>
<td>EU</td>
<td>European Union</td>
</tr>
<tr>
<td>TRESSPASS</td>
<td>robust Risk basEd Screening and alert System for PASSengers and luggage</td>
</tr>
</tbody>
</table>
Table of Contents

1 INTRODUCTION
   1.1 BACKGROUND
   1.2 AIM OF THIS DOCUMENT
   1.3 INPUT / OUTPUT TO THIS DOCUMENT

2 THEORETICAL FRAMEWORK
   2.1 SCOPE FRAMEWORK
   2.2 COORDINATION THEORY
   2.3 ACTIVITY SYSTEM
      2.3.1 BASIC PRINCIPLES
   2.4 IDENTIFYING OPERATIONAL KPIs

3 METHODOLOGICAL APPROACH
   3.1 CONCEPT OF OPERATIONS
   3.2 WHAT IS A CONOPS
   3.3 PROCESS MAPPING (MODELS) AND SWIM LANES

4 CONCLUSIONS

REFERENCES

LIST OF FIGURES

LIST OF TABLES

5 APPENDIX 1 GENERAL QUESTIONS FOR FIELDWORK
1 INTRODUCTION

This deliverable sets out the methodological approach to be undertaken for the purpose of gathering data for the development of operational process models. It is based on a CONOPS approach and informed by activity theory and the SCOPE analytic frameworks. The motivation behind this work is to ensure that the TRESSPASS risk-based solution to border crossing point management is achieved in a way that is consistent with the fundamental principles processes, and values of the end-users and stakeholders and ultimately adds value to their processes in terms of increased security, freedom of movement and cost effectiveness. For that reason, the direct contribution of end-users and stakeholders is essential to establish what the current processes are and how they will be impacted by TRESSPASS. The subsequent question of how to assess its value needs to be understood relative to end-user and stakeholder activities and concerns. For this reason, the current deliverable sets out an adaptable methodological framework for working with end-users/stakeholders to gather the required data throughout WP6 and feed the outputs into the development work packages. This methodological framework can also be used by other partners locally to gather data with the support of the WP6 leader NUIM.

Corresponding to task T6.1 we have scheduled an end-user/stakeholder workshop which will present and validate CONOPS models for establishing a baseline for further, more detailed studies with end users in their own operational environments. The workshop is scheduled to take place in Dublin on the 11th of December 2018 and will include the participation of border-agency representatives from the external advisory board, other non-consortium stakeholders, as well as end-user partners within the consortium. The CONOPS workshop will link closely with a user requirements workshop scheduled on the same day with the same participants to be facilitated by Zanasi and Partners who are leading WP1.

1.1 Background

As set out in the DoA, and quoted in Table 1, the sequence of activities states that an initial workshop shall be carried out with end-users/stakeholders representing different border crossing facilities. The feedback and basic information we gather from this activity will allow us to refine our sociotechnical1 process and system models which will continue to develop as we engage with the users during the ethnographic2 phase of the task. The planning for this will be performed subsequent to the workshop, which is scheduled to take place in December 2018 in Dublin. This document in the meantime sets out the methodology, particularly in

---

1 The term “sociotechnical” refers to the interaction between people and technology within an organisation, how they are interdependent, and how technology is an enabler of human social and productive activity. Instead of separating the human factor from the technological factor, sociotechnical systems are recognised as those where the human and technology factors are highly integrated and need to be designed, developed, evaluated and maintained holistically.

2 Ethnographic research refers to research carried out in the “real world”, through direct observation of and interaction with people in their own everyday environment, as opposed to laboratory-based research. A related term “field work” is used to refer to the specific techniques of observation, interviewing, shadowing, etc., for data collection in situ.
terms of question categories and analytical frameworks that will guide the gathering of data both during the workshop and during site visits. If necessary and with the availability of skilled personnel, other partners within the consortium may be able to use this document to conduct local studies with local partners in collaboration with NUIM.

**Table 1 T-6.1 Task Description from DoA**

Subsequent to the initial workshop that produces the proto CONOPS we will conduct a series of brief ethnographic (observational) interventions based on a contextual enquiry method with operational end users on site at the border crossing facilities in order to fully understand the context and challenges that they are working with as well as the range of activities involved in achieving the goals of border control. The outputs from here will further inform the evolving CONOPS and support the design and development activities. This will be guided by the Activity System and SCOPE analytical framework or human factors and operational analysis. We will be identifying concrete human factors and performance issues including cognitive (decision making, pattern recognition, sustained attention, behavioural and affective factors and how they are mediated.

**Table 2 D6.1 as per DoA**

Observational studies methodology and research framework.

Deliverable D6.1 is therefore presented here as satisfying the requirement to have a research framework to guide and support the conduct of empirical studies throughout WP6, and commencing with the first end-user workshop. This workshop will also be combined with a requirements gathering workshop for which there are a number of intersecting lines. The planning of these workshops has therefore been carried out collaboratively with Zanasi.

1.2 Aim of this document

This document will explain the theoretical and methodological approach to be taken by partners involved in the empirical research of WP6, particularly NUIM. It will provide the practical heuristics for questioning the participating partners both inside and outside of the consortium. It aims to ensure consistency of output so that comparable and equivalent data can be gathered by different personnel (if necessary) from different end-users while recognizing as a core principle the role of operational, structural, geographic, and cultural diversity.

1.3 Input / Output to this document

This document is informed by certain literature on sociotechnical systems, particularly as it relates to the CONOPS approach but also the theoretical and methodological approaches of activity theory and SCOPE. The main content is provided by NUIM as WP leader who possesses the core expertise for this activity. As the first deliverable in this WP and given its nature as a planning document there is no specific input of relevance from other WPs at this point, apart from the need to plan activities going forward to coincide with the tasks of WP1 requirements and needs and WP9 ethics. The output of this document will be essential for T6.2 and T6.4 and will also be of interest to WP1, WP7, WP8, and WP9.
2 THEORETICAL FRAMEWORK

The theoretical framework and methodological approach to be applied to the process of data collection and analysis comprises of elements from Cultural Historical Activity Theory, which is an analytical framework for understanding and evaluating sociotechnical systems. It assumes that the fundamental purpose of the technology within a system is to achieve human purposes (e.g., risk-based security, safety, border control) in line with human values (e.g., privacy, human rights, and cultural/religious sensibilities).

The operational space within the organizational system where the new innovation is proposed to be situated is evaluated with respect to the extent to which the current “as-is” system (including its operational process, tools, and use of resources) results in the achievement of the system goals. The proposed new technology can then be evaluated initially on paper in terms of the features, process methodology, mode of interaction, and intended outputs, and how they relate to the existing sociotechnical border management systems, and how it involves changes and the nature of those changes. It is assumed that new risk-based methods and technologies that support them are motivated by a desire to achieve a measurable outcome, in terms of improvement is security, throughput of people, vehicles and goods, and public perception, relative to a set of KPIs that will be identified and operationalised.

Normally, human factors focuses on the behavioural safety of individuals within safety or security-critical industries, or on the enhancement of the improvement of performance of individuals and teams within complex systems. Designing effective systems is no longer about getting the right match between the human and the machine or innovation for the performance of specific tasks. From the point of view of the project, and of key importance for TRESSPASS as a proposed system, operational effectiveness needs to be considered as a systemic outcome of an operational, tactical and strategic system-of-systems orientated towards the achievement of socially meaningful KPIs, which are also relative to broader societal considerations.

2.1 SCOPE Framework

Human factors, such as how they are represented within resilience engineering [1] approaches, take a systemic view of organisational and operational performance. TRESSPASS is implementing a new innovative approach to border management based on risk that will look at the human as a core part of a larger socio-technical system-of-systems, and the human as the main source of risk as well as mitigation agent. This will be analysed using the SCOPE (Supply, Context, Organising, Process, Effect) analytical framework.

This type of approach sees the human, and technological “actors” (tools) within a holistic and integrated system as part of a coupled process, integrated with other processes and systems and will examine the interdependencies between the human and non-human factors in order to arrive at the optimal configuration of human and technology that ultimately meets the human needs (border and customs authorities, security personnel, passengers and business stakeholders, etc).

We will therefore be developing operation models for each type of border crossing point and subjecting them to iterative development and critical analysis. We are interested in the various organisational, human, resource, informational, and environmental factors that
contribute to our understanding of not only how the models work but, more importantly, how the system works in reality. The models will therefore be evaluated with respect to empirical data, and evaluated to the extent that they provide assistance to the design and implementation of the TRESSPASS system and its evaluation.

**Figure 1 SCOPE organisational analysis framework**

Figure 1 above outlines the broader categories of analysis for operational systems. For the purpose of border risk management the intended outcome, or EFFECT, is increased border security x throughput of people, goods and vehicles x public confidence.

The EFFECT is where the key performance indicators, as defined by the border sector, are measured. The overall process and its various contributions needs to be linked to clear (KPIs) that can be traced back to the other framework elements such as Organising (administrative processes including the informal organising activities of personnel), Supply (of resources, HR, information) Process (as a planned element with its internal logic) and Context (including situation variables beyond the direct control of the operational organisation).

SCOPE (Supply, Context, Organising, Process, Effect), provides the process/system level methodological approach needed to develop the CONOPS model, its KPIs and evaluation criteria, including determining the appropriate role of technology and other resources within the system. This is achieved through dialogue with end-users and stakeholders allow for critical reflection on how well any of the elements contribute to the achievement of the Effect as measured by the KPIs.

The human-centred activity framework, below, based on Engestrom’s adaptation of Activity Theory [2] will complement this analysis by focusing on the perspective of the individual and teams within the process/system but without losing sight of the relationship between parts and wholes.

**SCOPE Fundamental assumption:**

There is a central organizing principle, determining the delivery of resources (people, information, material) into an organized set of task activities that produces the outcome of
the process (whether product, transport, service). Across the range of industries and services, there are three fundamental dependencies for a process:

- The input of resources including material, informational, human, and technological
- The performance of the tasks
- The coordination of the activities and processes – the linking up of the task activities to produce the output.

For any process the main sources of risk can be understood by analyzing which of these three elements is the most difficult and uncertain and therefore require more attention in terms of planning and design. These three parameters are dictated by several contextual aspect of the social and physical environment including spatiotemporal, technological and economic reality; the balance between them creates the underlying dynamic of that particular process system and need to be understand in an integrated and holistic manner.

**SCOPE Second assumption.**

There are several alternate ways in which an operational process can be organized and managed, according to a relatively limited set of dimensions such as, the complexity, uncertainty and controllability of the task activity, or the task object (in the case of border control this may be an individual, vehicle, or item of contraband). Six organizing factors are considered here – human knowledge & skill, standard operating procedures, leadership and clarity of objectives, co-ordination and the articulation of work, information feedback loops, and the role of automation and its effects. For optimal performance these need to be designed to meet the specific requirements of the process and actors and be in the right balance and relation to each other [16].

**SCOPE Third assumption:**

All of this activity can be affected by different types of contextual factors including personnel factors, the characteristics of the organizations involved (including culture), and the spatial environment (such as land, sea and air borders) in which the activity takes place. These contextual factors can influence, in different ways, the availability of resources, the performance of task activity, and the efficacy of the organizing mechanisms [16].

SCOPE attempts to explain how all of these factors combine to influence the performance of the process in producing its outputs. These outputs can be classified in terms of operational efficiency, cost, safety, quality, environmental impact, amongst others. The following, as contained in Fig 1 above, is a schematic representation of the heuristic structure for analyzing the role of various different operational and organizational factors on the outcome (effect).

### 2.2 Coordination Theory

*Coordination involves the “Synchronization and integration of activities, responsibilities, and command and control structures to ensure that the resources are used most efficiently in pursuit of the specified objectives. Along with organizing,*
monitoring, and controlling, coordinating is one of the key functions of management. When multiple actors pursue goals together, they have to do things to organize themselves that a single actor pursuing the same goals would not have to do. We call these extra organizing activities coordination. More precisely, we define coordination as the additional information processing performed when multiple, connected actors pursue goals that a single actor pursuing the same goals would not perform.”, [3].

The term “centers of coordination” was first used by Suchman [4] to describe the characteristic work that is going on in command and control rooms and similar settings. Centers of coordination are settings where collaboration is crucial and updates of the current state of work need to be made in real-time. Many studies have reported on the situational awareness of ‘what is going on in the room’ as an important and crucial factor. In the case of TRESSPASS, we are looking at the situational awareness in terms of a whole border crossing point with multiple agencies concerned. Typical centers of coordination are nuclear power plant control, air traffic control, and train control, but can also include less life critical control work, for example luggage handling at an airport.

"Centers of coordination are characterizable in terms of participant's ongoing orientation to problems of space and time, involving the deployment of people and equipment across distances, according to a canonical timetable or the emergent requirements of rapid response to a time-critical situation.”, [4].

The importance of understanding the goals of coordination, particularly the shared goals and objectives is of critical importance.

“In order to analyze coordination, an observer must have some idea of what goal the activities help achieve. The actors themselves, however, may not all have the same goals or even have any explicit goals at all. For instance, in a market, we might regard the goal to be achieved as one of optimally allocating resources to maximize consumer utilities.... Even though no single individual has this goal, an observer might evaluate market coordination in terms of how well it achieved this goal.”, (Malone, 1988).

The table below from Mintzberg, [5]) lists the various different types of coordination mechanisms that are possible within complex systems.
### Table 3 Coordination Mechanisms

<table>
<thead>
<tr>
<th>Coordination mechanism</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mutual adjustment</td>
<td>Achieves coordination by the simple process of informal communication</td>
</tr>
<tr>
<td>Direct supervision</td>
<td>Achieves coordination by having one person issue orders or instructions to several others whose work interrelates</td>
</tr>
<tr>
<td>Standardization of plan</td>
<td>Achieves coordination through the establishment of schedules by which the activities in organizations are performed</td>
</tr>
<tr>
<td>Standardization of work processes</td>
<td>Achieves coordination by specifying the work processes of people carrying out interrelated tasks</td>
</tr>
<tr>
<td>Standardization of output</td>
<td>Achieves coordination by specifying the results of the work</td>
</tr>
<tr>
<td>Standardization of skills and knowledge</td>
<td>Achieves coordination of work by virtue of the related training the workers have received</td>
</tr>
<tr>
<td>Standardization of norms</td>
<td>Achieves coordination by controlling the norms infusing the tasks, usually for the entire organization, so that everyone functions according to the same set of beliefs</td>
</tr>
</tbody>
</table>

Mintzberg’s taxonomy of coordination mechanisms is represented in Table 3 above. Border operations, including normal security and customs operations rely on a number of these such as direct supervision, standardization of plans, work processes, skills and knowledge and norms. However, non-routine situations reply to a greater extent on “mutual adjustment” which means explicit communication and negotiation to establish facts, agree on a course of action, divide labour and responsibility, etc. Procedures and contingency plans exist to minimize this but mutual adjustment will always be a feature of coordination activity in non-routine situations.

The notion of a “common information space” [6] can be either a physical (collocated) space or a virtual space through which information is represented, transmitted, stored and/or acted upon. Common information spaces themselves do not guarantee any particular shared or common knowledge or understand but can be said to represent a basic infrastructure for this to take place whether it be physical or virtual. The common information space depends not only of the artefacts that are used to store, represent and transmit information but on the processes of communication, coordination and negotiation that ensure mutual awareness and a common approach to subsequent action.

The notion of the common information space therefore emphasises the essentially human nature of cooperative work, as is the case in the airport operations in general and border security in particular. The security system needs to be understood as much as a network of individuals with their corresponding roles, activities and goals, some of which are local, some are global and some of which are short-term and some of which are long-term. It requires that the people within the security system have access to the same relevant information and feel that they can trust the sources and accuracy of that information and can thus feel that the process of communication and coordination between actors in the system is facilitated. Technology, such as the TRESSPASS system therefore needs to play an important role in ensuring that the common information space results in a common operational picture in order to facilitate coordination.
2.3 Activity System

The SCOPE framework takes a top-down systems approach. This is to be complemented by the bottom-up activity approach which looks at the day-to-day activities of actors within the system that work to achieve the system goals. The analysis of operations in order to inform the development of CONOPS for TRESSPASS will also be carried out using a particular theoretical framework that is commonly used in Human-Computer Interaction (HCI), Human Factors and Computer-Supported Cooperative Work for analysing and diagnosing sociotechnical systems [7], [8]. It is a psychological framework but instead of focusing only on the individual in isolation from his or her material, social and cultural context it examines the person as being fully integrated with their environment and engaged in socially-meaningful activity mediated by technology and other non-technological tools. This includes the perspective of individual border guards, customs officials, security officers and police, passengers, port, land, and airport managers, etc. The Activity System framework is relevant for the deployment of this methodology as it focuses on a micro-level of analysis from the point of view of an individual user or stakeholder, but at the same time it links to the overall sociotechnical system. This sense we get two separate but integrated perspectives – one from the higher-level system view and the other from the bottom-up actor view.

Cultural-Historical Activity Theory is a framework for analysing the activities of people, groups, organisations and communities in terms of their interaction with their material, historical and sociocultural worlds. It has its origins in the socio-historical work of the Soviet psychologist Lev Vygotsky [8], [9], and continued by Alexei Leontiev [10], among others, who emphasised the need to understand human activity in terms of socially meaningful motives and goals as opposed to attempting to analyse the actions of individuals in isolation from others and divorced from their material, historical and cultural circumstances. This is particularly important when we are talking about border management data because it underlines the essential social meaningfulness of technology – without the social (societal) motive, it would not exist. This is a factor that relates directly to the policy context of border management.

The activity system is a version of activity theory developed by Yrjo Engestrom [2] that broadens the discussion of motivated, object-orientated, mediated activity towards emphasising the relationship between a person (subject) and their community. Fig. 2 below illustrates the relation between the various nodes that constitute the activity system.

![Figure 2 Engestrom's (1987) Activity System](image)

These nodes are:
D6.1 Observational studies methodology and research framework

- Subject: the person who is acting towards an object (goal). In this case in can be the border guards, security officer, police officers, customs official, passenger, freight driver, etc.;
- Object: the goal or product to which the activity is directed – identifying persons, and objects (vehicles and cargo) that correspond to an above-threshold risk;
- Instruments: the tools or artefacts that mediate the subject’s achievement of the goal – the TRESPASS integrated system of tools and methods;
- Community: the social and cultural context that makes a subject’s object-orientated activity meaningful, whether the person is acting for or against the community – for TRESPASS this is the socio-organisational structure of the different agencies involved in border crossing and the range of individuals (subjects) that comprise them;
- Division of labour: recognising that a person’s activity is usually dependent on the activities of others and others are dependent on yours. There are different roles which interact with each other – this is particularly important in terms of anticipating and mitigating cascading effects by looking at the spatiotemporal interconnectedness of peoples’ activities;
- Rules: these are the constraints that limit activity including the legal constraints, ethics, procedures as well as informal social or cultural norms – this links to policy consideration as well as operational rules;
- Outcome: the meaningfulness of activity is ultimately judged in terms of the outcome – whether or not your goals have been achieved (KPIs). A modification or change in any one of the nodes can affect the outcome as they are all essentially interdependent. For TRESPASS there is the intention to achieve enhanced throughput, security, and confidence, which is meaningful not only for the border crossing authorities but also society as a whole.

Collectively, all of these nodes and their relation to each other constitute the activity framework. None of these nodes are meaningful by themselves but must be considered in relation to all the others. Therefore when analysing human activity we can use this framework to generate a series of appropriate and integrated questions or heuristics in order to gather data about what a person is doing, why they are doing it, with whom are they acting, what tools or resources do they use or require, what are their constraints and what is the overall motivation for their collective activity.

Activity Theory is highly contextual, meaning that while this high-level framework can be applied to any human activity context, and any border crossing situation, the resulting answers do not set out to provide generalisations but rather a richer understanding of the concreteness of a particular activity. However, as we are attempting with this deliverable, it can support the identification of common themes through a dialectical process/system of analysis which will ultimately facilitate the process of design and implementation as well as evaluation of the TRESPASS system.

2.3.1 Basic principles

Activity theory is not a theory in the conventional sense in that it does not “explain” human action or behaviour, nor does it generate hypotheses. Rather, Activity Theory should be thought of as a heuristic framework for asking practically useful and meaningful questions
about what people are doing when engaging in their activities, particularly where technology is involved. It is therefore a general conceptual system for analysing and understanding human activity in a given context, particularly with reference to its social and cultural significance.

The basic principles and assumptions of Activity Theory, as adapted from Kaptelinan & Nardi [11] include:

- “The hierarchical structure of activity,
- Object-orientedness,
- Internalization/externalization,
- Symbol & Tool mediation
- Development over time
- Contradictions
- Functional organs”

**Hierarchical structure of activity**

In Activity Theory the basic unit of analysis is socially-meaningful activity. Figure 2 above represents a model of activity in terms of Engeström’s activity system, which is his approach to formalising the framework. All of the nodes within the triangle collectively represent the activity, which is composed of subjects orientated towards objects, mediated by tools and situated within a social and cultural milieu. An activity is defined in terms of its object, that which provides the motivation for the activity in the first place. Actors can be said to be performing the same activity when they share the same object, although they may have different roles or tasks. The activity however also has a hierarchical structure. Performing an activity involves performing a series of more specific actions, which are directed towards specific goals. Each of these actions in turn involves the performance of operations which are low-level acts that are often automated or highly routinised to the extent that they do not require conscious attention or control.

Different personnel of different levels of experience, skill and ability may approach an activity at a different point in the hierarchy. A novice will spend more time and focused attention on mental and physical operations whereas and experienced operator will commit their resources to higher-level executive tasks. It is important to note that the introduction of new tools and systems can have a disrupting effect. It can make the novice perform at an expert level through automation and decision support, etc. It may potentially make the expert operator redundant. These are some of the consideration that we should entertain when evaluating the TRESSPASS system from a social and societal point of view. The basic principle here is that we should be watchful for all performance implications technology brings to operations and how we interpret their significance.
The human-centred activity framework, below, based on Engestrom’s adaptation of Activity Theory [2] will complement this analysis by focusing on the perspective of the individual and teams within the process/system but without losing sight of the relationship between parts and wholes within a sociotechnical system:

- The human actor in any system (subject) is goal oriented (towards and object) - a border/customs agent is orientated towards the discovery of undocumented people and goods.
- There is an inseparable relationship between the person and their role and the object of their activity
- The extent to which they are successful at achieving their goal results in a measurable outcome through the application of appropriate KPIs;
- The relationship between the subject and the object (and therefore the outcome), is mediated by technological and other artefacts (instruments or tools such as TRESSPASS);
- Change, addition or removal of any technological artefacts will have an impact on the outcome, such as change in the processes, structure, culture and the introduction of new tools.

The actor is part of a larger organisational system with a division of labour meaning that the activities of the individuals are linked with those of others. Understanding border crossing point therefore requires the understanding of the social and cultural (community) aspects of the organisational system such as the customs, border official, law enforcement, facilities manager, etc.

Activities are governed by rules, including ethical and privacy regulations which are essentially a set of constraints which set the boundaries for activity. This may be a changing field as policy changes will impact how border crossings are managed.

The main components of this framework allow for a reading of the diagram in Fig. 2 in the following manner. The “subject” refers to a person (or in certain cases an agency) who is guided by a certain motivation linked to the achievement of an “object” or goal. This relationship between the subject and object is a tight one in the sense that they both co-define each other. An individual’s professional identity is closely tied to the object that they
are attempting to achieve in their activity. The subject-object relationship is also mediated by “instruments” or tools which for some may be risk analysis or visualisation tools or databases and repositories of documents. The mediating tools depend on the individual and their task/object. The nature of the tool, in terms of its design and quality can mediate the activity in terms of affecting the outcome.

The subject is also part of a larger organisational context (community) with a division of labour or responsibility, and is governed by rules or constraints; Awareness of the contradictions between actors and their interests and concerns.

A boundary object represents a situation where the object of one person’s activity coincides with that of another person or agency. This can be as a result of direct collaborative activity where multiple parties are working on the same object but it can also represent situations were subjects are working towards the same or closely related goal but coming from different perspectives with diverging concerns and motives. A boundary object therefore can be a point of harmonisation or conflict depending on the values, motives agendas and constraints of the people and agencies involved.

An example of a boundary object is a vehicle subject to customs checking. From the point of one actor in the system-of-systems the integrity of the check, both in terms of customs and security, is the main criterion for success. For another, however, it may be the throughput of the crossing point which has economic and cost implications.

Object-orientatedness

As discussed already, in activity theory, human activity is orientated towards objects. Objects can be understood as meta-goals, which are governed by motivation. For a football player, the goal of his action may be to score goals but this is not the object of the activity. The object in this case is winning the game or even the tournament. It is only when the true object of the game and its associated motivation are understood can we really understand what twenty two players are actually doing on a football pitch. No amount of description of what is observed to be happening on the field will provide this understanding. Instead it is necessary
to acquire an understanding of the cultural, social, historical and material circumstances under which the game is being played and from which these players and the fans are coming from.

People are always acting towards some goal in the course of their activity, whether it is the identification and apprehension of suspects and contraband, or the protection of innocent civilians at the border and beyond. All human action, including play, is assumed to have a function or purpose relating to the objective world. The key to understanding human behaviour in a situation lies in understanding what the object-orientation of people involved is. Only through doing this can we adequately comprehend the role and utility of technology, policies, procedures, etc. in terms of border risk management.

A subject’s object-orientation is simultaneously personally meaningful as well as culturally meaningful in the sense that a person’s goals are not identified in a social or cultural vacuum.

**Internalization/externalization**

This relates to what Norman (1988) discussed in terms of the relationship between knowledge in the world and knowledge in the head. Some knowledge is stored in external representations, such as maps, computer drives and screens, SOP (standard operating procedures) manuals, etc. Alternatively knowledge is also represented internally in the human mind, i.e., in memory, mental representations, schemata and mental models. Although Activity Theory differentiates between internal and external activities and representations, it emphasises that internal activities cannot be understood if they are analysed separately from external activities, because they transform into each other. Internalisation is the transformation of external activities into internal ones.

The implications of the distinction between internal and external knowledge are substantial. This is particularly important when it comes to situational awareness as a command and control officer needs to achieve a match between the situational picture in his or her head and the actual reality on the ground, (such as where their personnel are at any given moment). If this is mediated by technology providing a common operational picture then there needs to be a clear mapping between that picture, what is happening on the ground and what is understood by command and control officers. Therefore there is a balance to be achieved between the reliance on externally and internally stored and represented information.

**Symbol & Tool Mediation**

The notion of mediation is central to activity theory. It means essentially that our activity usually relies on employing some artefact, which enhances (or diminishes) our ability to achieve our object. We usually refer to such an artefact as a “tool”, especially during productive work activities as we rarely refer to such artefacts used during leisure activities as tools (consider a games controller). However, the principle is the same. The absence, presence or quality of the mediating artefact or tool has an affect on the outcome of the activity, in complex ways however. Consider as an example, a person wishing to dig a hole. This is possible to do using his hands, provided that the earth is soft. However, the activity is transformed when he uses a spade, as he is now able to dig a deeper, wider hole in a shorter time. In both of these cases, the person may identify himself as a hole-digger. However, if we substitute the spade for a mechanical digger, the activity is transformed more radically. Not only is the person capable of digging a substantially larger hole in less time but it may also transform his identity from hole digger to machine operator.
In other words, changing the nature of the tool not only changes the outcome of the tasks quantitatively but may also change the activity qualitatively. Computers were once considered as discrete tools used for performing discrete computational tasks. Nowadays there are so ubiquitous and ingrained in the fabric of our social and cultural lives that they have both transformed and been transformed by our day-to-day activities. We are acutely aware of how risk management data has transformed social relationships and we are still in the process/system of understanding its current and potential role in crises.

Similarly, symbol systems such as language have an impact on how we think and therefore behave. This is important, not only for the linguistic aspects of risk management, but also in terms of the standardisation of symbology. Consider the difference in outcome when attempting to perform long multiplication using roman numerals versus Arabic numerals.

**Development over time**

Nothing remains static and human activities develop over time. Society’s needs change, technology changes, peoples’ knowledge and education changes, and their objects and goals also. In Activity Theory, development is not only an object of study, it is also a general research methodology. Activity theoretical research tends not to be done through laboratory-based experiments but through naturalistic and contextualised studies combining active participant observation in the context of study with the monitoring of how study participants (subjects) change and develop over time and under changing conditions. Therefore it is not only how risk management data is currently used that is of interest but also how it may be used in the future, through observing its change and development, both through use and through design, over time.

**Contradictions**

Engeström [2] discussed the notion of contradictions within and between activities. What this refers to is the fact that often there is a conflict between two or more nodes within the activity system. For example, the goals of an individual may be at odds with those of the organisation as a whole, or the goal of an individual may thwarted by the poor quality or inappropriate design of the tools used to achieve it. Contradictions are particularly relevant when considering the interaction between people and organisations as well as the suitability of innovations.

According to Engeström there are four categories of contradictions:

1. Primary contradictions. These are contradictions that occur within a node. For example, a person needs to call emergency services but is mute and therefore does not have the vocal ability; a novice firefighter has not been trained in the use of a particular type of equipment thus lacking the knowledge or skill; a piece of equipment that is appropriate for the task but is broken or of poor manufacture.

2. Secondary contradictions. These are contradictions that occur between nodes. For example, a person trying to achieve a goal that is in conflict with the goals of others in the community with whom they share a division of labour, or a well-designed and manufactured piece of equipment is simply the wrong tool for the job intended, or
the rules or procedures prevent the person from attempting to achieve their objectives.

3. Tertiary contradictions are those that exist between a current activity state and a future state. This is directly related to the notion of development and the changing of relationships between people, goals and tools, etc., over time. This is particularly relevant for contexts that involve change-management such as the introduction of new risk based approach. The introduction of new technology to meet expected future needs may fail due to the over-rigidity of organisational structure as an example, if the two fail to evolve together.

4. Quaternary contradictions are those that exist between two different activity systems, usually understood in terms of differences in the motives and objectives or different stakeholder at organisational level or between organisations. An example may be the difference in agendas between operational staff who are concerned with having all the resources necessary to maximise effectiveness in times of risk and threat on the one hand, and the agenda of management who need to maintain cost efficiencies, throughput, to ensure a more sustainable availability of resources. Such contradictions may be real or perceived, either way they require careful consideration from the point of view of tool and operational process/system design.

**Functional Organs**

When we consider a person in an activity attempting to achieve a goal, and in so doing uses a mediating tool, such as a hammer to drive a nail, we do not consider the hammer as a separate entity in the context of the activity, as the activity would be impossible without it. Likewise, we have become so accustomed to seeing people read a newspaper while wearing spectacles that we often find it strange to see them without them. The boundary between the person and the tool often becomes blurred to the extent that it is absurd to separate them. Consider the blind person with the cane, we might ask the question as to whether the boundary between the person and the world exist at the point where they grasp it or at the point where the cane touches the pavement. In these examples, from a functional point of view, the person-with-the-tool, is an integrated whole. Of course it is possible to separate the two but when used for the purpose of meaningful activity such a conceptual separation would prove misleading.

### 2.4 Identifying operational KPIs

As mentioned earlier, knowing the intended outcome is critical to the success of a system and in terms of risk management operational KPIs and their monitoring are critical to ensuring that risk is a natural outcome of good operational practice. The following figure gives a summary of the higher-level categories of KPIs extracted from the detailed analysis of the reference scenarios structured according to Donabedian’s Structure – Process – Outcome [12] scheme. KPIs are critical to a CONOPS as they are closely associated with the desired future operational status of the system.
Figure 5 Generalised KPIs according to the Donabadian scheme

Change management including the implementation of new risk-based processes and therefore requires a clear vision of what the intended target state (to-be) will be and this is an essential part of CONOPS. The key to successful implementation of innovation such as the TRESSPASS project is, along with the process of CONOPS definition and analysis, the definition of the appropriate operational metrics.
3  METHODOLOGICAL APPROACH

3.1  Concept of operations

Apart from the theoretical underpinnings which govern the nature of the enquiry that we are now going to discuss the specific methodological approaches which include the develop of concepts of operations and their evolution and validation throughout the project intended to support requirements gathering and design. This will be achieved with reference to the standard IEEE approach but with a more critical emphasis taken from the activity theoretical framework and the use of a participatory approach to gathering the data and validation. CONOPS is a conceptual design activity which used to support the physical design, development and implementation of the system by providing the proposed integrated vision of the future operations and helping to anticipate the challenges of achieving it.

The term ‘concept of operations’ or ‘CONOPS’ refers to a user-oriented description of a proposed system with respect to its operational use context. In this case we are referring to the risk management processes and systems involved in critical infrastructure. It relies on a framework of operations for a specified system that sets out the system’s function, the roles and responsibilities of actors within the system, and its relationship to its surrounding dependent systems, along with resource implications. For example, in the context of border management there are key dependencies between border agencies and civil authorities who need to be considered in the context of risk planning and day-to-day management in a prospective way. While the TRESSPASS SYSTEM describes in detail how the process of risk management as an activity enacted by operators, the CONOPS is more concerned with the integration of innovation into operations such as risk management tools, whether they be software systems of guidelines themselves and the process of change management in general. There is the assumption of some degree of organisational restructuring accompanying such innovation as is routinely the case. The CONOPS intends to provide the guidance to ensure that an integrated approach is observed so that critical inputs, outputs and dependencies are observed and harmonised responsibly.

CONOPS at its most fundamental involves addressing a series of high-level questions through an iterative process relating to an analysis of current operational practice. There is an evaluatory or diagnostic element to it which is concerned with identifying the key requirements of innovation in terms of roles (such as risk management), tools, regulation and technologies among other resources.

3.2  What is a CONOPS

The term CONOPS has been employed in many different contexts, including software development, engineering, administration, and military/defence and crisis and emergency management. Each of these domains carry their own perspective as to how a CONOPS should be utilized and the function it best serves. The TRESSPASS perspective to CONOPS is informed by these historical approaches but carries a much more human-centred focus in that it emphasises how the system should best be operationalized to meet the needs of system actors and key stakeholders.

A CONOPS is not a detailed user-requirements document but functions as a high-level description of the proposed end-state which helps to guide the technology development and implementation process. It is not a static representation of the ultimate state of the system.
as it can reciprocally change as the development process requires based on user-requirements changes or technical limitations but nonetheless provides a conceptual reference for the direction of the technological development.

The US Department of Homeland Security (DHS) views a CONOPS as a means to establishing a description of the system from the perspective of the user objectives it aims to fulfill. A CONOPS is used to set out the system’s relationship with existing assets, systems, and capabilities and describe how the system will unfold in the operational context. In this respect, a CONOPS document is a something akin to a mission statement that encompasses the oversight of all system assets and communicates the role, responsibilities, and interdependencies of the key actors that reside within that system with respect to the achievement of the overall objective.

In terms of this perspective, a CONOPS is primarily a communication document for those working towards a common objective to ensure integrated coordination. The key being the clarity of the overall mission objectives. Additionally, the presence of a CONOPS document can assist decision makers in developing solution concepts through the consideration of possible scenarios and how novel solutions, or how changes to solutions may be implemented. One main criticism of this approach is that it tends towards being very prescriptive and top-down as a method of how the objective should be achieved and what the end solution should look like; the viewpoint of the actors who operate within this system – their needs, their preferences, and, most importantly, their expertise – is not emphasised, although clarity of their roles is.

Within the domain of software development, CONOPS is used as a means of establishing potential solutions for system design [13]. In comparison to the DHS approach that describes the operation of a system as it should be, here CONOPS describes a system as it will be, as a target state while at the same being subject to change depending on changing requirements and results of prototype evaluations. Under the IEEE model of CONOPS, a concept of operations is undertaken as one of the initial steps in the creation of a new tool. One of the initial steps in the process of system development is the elicitation of system needs and requirements through stakeholder consultation. This consultation process is used to justify system changes and the rationale that underpins the future system design. However, the CONOPS document is not simply a detailed list of specified user requirements for a new tool. It begins with a description of the current system state, justifies the need for change and where change should be undertaken, and then provides the vision for what that future system should be. It is this initial model of operational systems that allows for envisioning of desired future states and opening up the dialogue on what that should look like.

According to the IEEE [14] a CONOPS is a document reached by the consensus of developers and end-users that clearly defines what a technology, system, or solution will look like. The CONOPS interpretation offered by Fairley and Thayer [13] for the introduction of new systems carries a very similar structure. However, it looks to clearly state, “the users’ needs, goals, and expectations, operational environment, work processes, and other appropriate characteristics (p. 421)” for the purpose of ensuring that the development process will guarantee traceability back to those needs. However, the level of involvement of the user in this process can stagnate somewhat after the initial period of consultation.

Our own approach to CONOPS places particularly emphasis on the needs of end-users and the operational realities of their working environment. It advocates for a process of iterative system development and close consultation with end-users and system stakeholders. In this respect, gathering system requirements is not sufficient to produce the concept for the prospective system and, likewise, offering a description of system architecture is not sufficient
as a means of vision for a system state. To establish what a prospective system should be requires cognizance of the working culture of the prospective end-users and how that environment may further impact on the use of the tool.

A concept of operations (CONOPS) is a document that is used to support the process of system development or system change. It provides a consensus document that communicates the vision for change from the current system to the prospective system to all system actors and stakeholders. This document will aim to establish the core concept behind this vision for change, specifically the TRESSPASS system for the development of risk practice.

The process of building a CONOPS representation involves seeking answers when and where available to a series of high-level questions centred around the context of use. These include the Who; Why; What; When; Where; and How questions as indicated in Fig.1.

![Figure 6 CONOPS Development - Key Questions](image)

Gradually by seeking answers to these questions as the iterative process of development progress we build up a more detailed and tighter picture of the key aspects of the platform and its contexts of use. The iterative nature of CONOPS is emphasized by its role in the typical “V” cycle of software development where it is an initial representation of the concept, as informed by the workshops carried out in WP6 and WP1, and then through a dialectical process feeds into and gathers input from the iterative user consultation process.

![Figure 7 CONOPS within the innovation cycle (V cycle)](image)

The CONOPS process involves taking our knowledge and understanding of the fieldwork results and exploring what the problem space looks like to the identification of opportunities and rationales for change. It involves addressing questions relating to the reasons and motivations behind change which may be imposed through external forces (market, regulation) or internal, such as continuous improvement initiatives.
A clear statement and description of what the proposed changes are is required including:

- **capability changes** – adding deleting and modifying functions;
- **System processing changes** – such as changes in the way in which the system processes information or product producing new output with the same data/resources or the same output with modified data/resources, or both;
- **Interface changes** which may work in either direction, e.g., interface changes modifying the system or system changes modifying the interface (which is the point at which system components, especially human, interact with each other);
- **Personnel changes caused by new requirements**, including changes in personnel numbers, roles, responsibilities, automation, etc.;
- **Environmental changes**;
- **Operational changes**, such as changes to the user’s operational policies, procedures or methods;
- **Support changes in terms of changes to the support or maintenance requirements**;
- **And Other Changes**…

From IEEE [15]

The potential changes that have been identified and proposed then need to be prioritised including indication of what is essential, desirable and optional.

The CONOPS of the new system incorporating the changes identified follows the same process and descriptive categories as the previous description and analysis of the current or “as is” system. With this version we create a vision of how the changes work seamlessly within the operational processes and structures and using the required resources. A stakeholder, whether they be a user, procurer, client, designer or manager, should be able to read that document and come away with a clear understanding of what the benefits of the proposed change are, how they will be realised, by whom and for whom, what resources and costs will be involved, how it sits within the physical, geographical and social environment.

### 3.3 Process mapping (models) and swim lanes

Figure 8 below above represents a sample scenario-based process map for testing the interdependencies between actors and the mediating role of tools. TRESSPASS will use this methodology adapted to the specific contexts of border crossing points and scenarios developed.
D6.1 Observational studies methodology and research framework

Fig 8: Example of a security scenario process map from the TASS FP-7 project

Fig 9 below represents a generic passenger process map based on actual airport process maps from a security point of view presented as swimlanes. This version is restricted to the areas where security is mainly applied with swim lanes representing the passenger, airline and airport. As can be seen, it is impossible to isolate any of these processes without having to consider the interconnectedness across processes to ensure the application of security measures.

Representations such as these will be used to present to end-users and stakeholders as a means for “hooking” a discussing about the role of people, tools, and other resources, and identifying the challenges for innovation.

Fig 9: Sample swim lanes representing the intersection of activities - from the TASS FP-7 project
4 CONCLUSIONS

This deliverable has provided as a resource both the theoretical and methodological approaches to be taken with WP6 for developing the CONOPS models and their validation/evaluation.

The theoretical foundation is linked closely to the SCOPE framework for top-down organizational analysis of operational systems including the various constituent elements that combine to achieve the outcome. The activity theory framework allows for the complementary approach focusing on the perspectives of multiple individuals involved in border cross point management and how risk-based approaches will impact their activities.

The CONOPS models will provide an anticipation of the future in comparison with the present to support design and anticipate the challenges associated.

As a practical method, the use of operational models in the form of scenario-based process maps which include the personnel and technologies involved in both the current and proposed future operational systems, incorporating the risk base methods and tools will be developed to support the definition of the concepts of operations.

The next steps will be the facilitation of the WP6 and WP1 integrated workshops which will be used as a foundation for the initial identification of the CONOPS and the development of a plan for further empirical exploration.
REFERENCES

LIST OF FIGURES

Auto-generated figures list follows. Right click and use Update Fields to update content automatically:

Figure 1 SCOPE organisational analysis framework ................................................................. 10
Figure 2 Engestrom's (1987) Activity System .......................................................................... 14
Figure 3 Hierarchical structure of activity as depicted by Wilson (2006) ............................... 17
Figure 4 Boundary objects - overlapping activities .................................................................. 18

Figure 5 Generalised KPIs according to the Donabadian scheme ......................................... 22
Figure 6 CONOPS Development - Key Questions ................................................................. 25
Figure 7 CONOPS within the innovation cycle (V cycle) ....................................................... 25
Figure 8 example of a security scenario process map from the TASS FP-7 project ................. 27
Figure 9 Sample swim lanes representing the intersection of activities - from the TASS FP-7 project ......................................................................................................................... 27
LIST OF TABLES

Auto-generated tables list follows. Right click and use Update Fields to update content automatically:

Table 1 T-6.1 task description from DoA......................................................................................... 7
Table 2 D6.1 as per DoA .................................................................................................................. 7
Table 3 Coordination mechanisms .................................................................................................. 13
5 Appendix 1 General questions for fieldwork

1. **What is the role of the organisation** in normal circumstances and in non-routine?
   a. How does that change between normal operations and non-routine?
   b. Are there changing demands on resources?
   c. Does the organisation require resources from other agencies?
   d. Are other agencies dependent on your organisation?

2. **Who are you and what is your role in the organisation?** This relates to the primary issue of which personnel within the organisation are we talking to or in other words, from whose perspective are we trying to understand the requirements. This is a critically important consideration. The question of what the requirements of a border agent are in terms of performance and diagnostic data may be answered in very different ways based on different individuals’ roles in the organisation. For example, operational staff may see the role and function of border management data differently from management or support personnel (which may include in-house system developers). The question then is not which of them is correct but rather how do these requirements intersect. Are they harmonious or conflicting; convergent or divergent; dependent or independent? It needs therefore to be established which actors within in the organisation have a stake in risk management data. Questions that may be asked include:
   a. What is your role in the organisation?
   b. What is your process for managing safety/quality/security (resilience)
   c. What is your role in an emergency situation?
   d. What kind of skills do you have?
   e. What kind of training have you done or do you need to perform your role?
   f. How were you selected for this role?
3. **What are your tasks, goals and objectives?** This question relates to the *object* of the activity, in other words, when they do their work what are they attempting to achieve and how? This requires a detailed understanding of their tasks and process/systems and the goals to which they are working. Also, this involves understanding how their tasks and goals intersect with those of other operational staff, support staff, management, etc. Questions such as:
   a. What is the usual daily routine of your activities?
   b. What are the main challenges that you have to deal with when doing your job?
   c. In what ways are you dependent on other people to do what you do?
   d. In what ways are other people dependent on the output of your own activity?
   e. How is the performance of your activity measured (outcomes) in terms of KPIs or by what terms are you made aware of how successfully you’re achieving your goals?

4. **Why do you do that (or why this particular way)?** This relates to the basic *motivation* for performing their tasks and what the rationale is behind the objectives. This is particularly important as motivation for the same task or similar tasks can be different for different people. It is important therefore to pay close attention to the language used to describe the rationale behind the activity. Questions such as:
   a. Why is this task or activity important (in the greater scheme of things)?
   b. Why is this important to you (personally)?
   c. If you didn’t do that what would the consequences be?
   d. What concerns do you have (if any) when you are doing it (e.g., safety, ethical, legal, moral, efficiency, effectiveness, etc.)? Or, what goes through your mind?
   e. Could it be done differently?

The key here is to understand the role of the resources *in-the-context-of-use* (in activity). While this question most directly relates to the actual issue of requirements, the previous questions provide the context that makes the technological requirements meaningful. Therefore this question should not be asked in isolation from the others.

There are two issues to address here. The first relates to how things are done now, to be referred to as the “as is” context. The second relates to how things might be in the future, to be referred as the “to-be” context. In the as-is context we are seeking to understand what tools and resources are currently being used, along with their adequacy. Questions such as (for example):

1. What are the key tools you need to get your job done?
2. What are the minimum resources you require?
3. Beyond the minimum resources, what added value do other tools used offer?
4. What do you need to know (what information do you need); what if anything are you missing in terms of information?
5. How is information managed or communicated?
6. Do you trust the quality or accuracy of the information?
7. Do the current tools work well, do they ever let you down, are they robust, do you trust them, can you rely on them?
8. Are currently tools easy to use?
9. Do you currently use any risk management data tools in your work (if not already mentioned by them)?

In relation to the to-be context we need to avoid direct questions such as “what kind of risk management data do you need or would you use? Rather, such questions should be
Directly related to the activity context in terms what changes might bring about added value to your activity or process/system. Respondents may speak directly of risk management data themselves or indirectly in terms of the role of or need for information. Sample questions such as the following may be relevant:

1. Where do you see potential for improvement or change in terms of performing your tasks?
2. In light of inadequacies you mentioned earlier, what would you change and why?
3. How would you like to see things being done differently or how would you do things differently?
4. What could make your role easier, safer, more effective, more efficient, etc?
5. Are you currently aware of risk management data tools being used in crises by Border agents?
6. Can you see a role for it in your activity?
7. How might it change the nature of how you do what you do?
8. Where would you see risk management data fitting into your current activities, process/systems or tasks?
9. What added value if any would you anticipate?