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**D600.1B**  
**Report on ethical issues related to ENCOUNTER technologies**  
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## 1 Summary

D600.1B aims to apply the preliminary work of D600.1A (concerning the basics of the ethics of IED countermeasures) to the technologies developed in ENCOUNTER. The investigation shows that most of the ENCOUNTER technologies are predominantly unproblematic from an ethical point of view. As we will show, there are some ethical issues concerning certain aspects of the technologies' usage. But none of them seems to be irresolvable and therefore totally ethically disqualifying the technology. However, as we will explain furthermore in chapters 2 and 3, the final ethical weighting of these aspects cannot be conducted at that time but has to be done when the technologies reach operational maturity and become part of the IED countermeasure capabilities of security forces.

## 2 Introduction

Annex I (DoW) of the ENCOUNTER Grant Agreement states, that WE610 will "investigate the ethical issues of the application of IED neutralization techniques"<sup>1</sup>. D600.1A documented the first stage of this investigation. In this phase we have identified the main ethical areas of conflict in the IED context based on the analysis of standard procedures of rendering safe a deployed IED, already available deliverables of other work packages and related work from the field of security ethics.

As we already argued in D600.1A, "ethics" is a term that is commonly used for a wide range of different questions relating to a systematic approach towards individual and societal morals and norms.<sup>2</sup> Ethical research can therefore be defined in the following manner: it relates to the development of a systematic approach that allows the evaluation and modification of a given situation in the light of certain individual and societal morals and norms. Applied to WE610, this means that ethical research tries to systematically identify all aspects of IED neutralization techniques and procedures that are relevant for their ethical evaluation, or in other words, that may come into conflict with individual and societal morals and norms or that necessitate an ethical weighting.

In D600.1A we also argued that ethical research, besides of identifying ethical issues, also relates to *formulating solutions* to certain ethical problems (e.g. by modifying given situations or, in our case, technologies appropriate to identified ethical requirements) and that formulating such solutions for ENCOUNTER technologies will be part of D600.1B. Contrary to that assumption, in D600.1B, we still had to predominantly focus on *identifying* ethical issues related to ENCOUNTER technologies. This is mainly due to the fact that the ENCOUNTER technologies are by now not in a finalized, operational state. Since the ethical issues concerning ENCOUNTER technologies do – as we will show – mostly not relate to the inherent capabilities of these technologies (contrary to typical security technologies and measures), their relevance as well as possible solutions do predominantly depend on the circumstances of the technology's usage in real IED scenarios. On one hand, these circumstances cannot be reliably projected in the technologies' current stage of development. On the other hand, these circumstances will



also significantly depend on certain rules of operation of EOD teams that are determined by national regulations. Therefore, ethical research in D600.1B has to be limited to carving out the main ethical issues of ENCOUNTER technologies which then will have to be considered when the technologies reach operational maturity.

### 3 Research Method

The research method of this investigation mainly bases upon the preliminary work in D600.1A. As we already argued, the ethics of IED countermeasures constitute a very special aspect of security ethics. This means that there is no standardized methodological approach and no related work, relevant to this investigation. However, some aspects of security ethics that we already outlined in D600.1A have to be considered. As we have showed in the preliminary work, especially the *unintended consequences (and capabilities)* – as a common issue of security ethics – have to be investigated regarding the ethics of security technologies or, in our case, IED neutralization techniques. For that purpose, we have split the case of an IED incident into different parts in D600.1A. These parts (decision-making process, IED neutralisation procedure, accompanying measures) have then served as a framework for identifying general ethical issues (particularly the abovementioned *unintended consequences*) of IED ethics. These general ethical issues will now serve as points of reference for the investigation of ethical issues related to the ENCOUNTER technologies.

In D600.1A we also argued that choosing certain morals and norms as a standard of ethical evaluation in ENCOUNTER would be epistemologically contingent – at least as long as we do not want to limit the investigation to a national perspective. (For detailed information please see D600.1A, chapter 6) Therefore and because of the abovementioned state of development of the ENCOUNTER technologies, we will not conduct the actual ethical weighting in D600.1B. In fact, the ethical conflicts identified in this investigation will, in due course, have to be solved on the basis of the respectively relevant morals and norms, when the technologies reach operational maturity.

Due to the lack of sufficient information the barrel disruptor improvement, developed by BLT, had to be excluded from the investigation.



## 4 Ethical Issues Related to ENCOUNTER Technologies

### 4.1 Blast Attenuator Bin

#### 4.1.1 Ethical Aspects Concerning the Neutralization / Mitigation Procedure

The blast attenuator bin is probably the one of the ENCOUNTER technologies that features the most obvious ethical problem area. As we argued in D600.1A the Render Safe Procedure (RSP) of a deployed IED has to meet the requirement of not endangering the EOD personnel (or other persons) more than absolutely necessary. Therefore, we showed on the very spot, that the RSP has to follow the sequence remote, semi-remote, manual. As far as we know, the blast attenuator bin is planned to be deployed manually and therefore reverses the sequence, especially since it is designed as an interim measure. In case this applies to the actual application of the technology in real IED scenarios it constitutes a serious ethical issue (*unintended consequence*), since it does obviously endanger the EOD personnel or the first responding police forces. This opinion is also shared by the EOD experts interviewed in D600.2.

At first glance one might argue that this aspect does ethically disqualify the technology at all. However, there are conceivable scenarios in which the endangerment of EOD personnel might be ethically outweighed by the benefits of a deployed bin. For example, if an IED is deployed at the only evacuation route for civilians out of the danger zone one might, on one hand, consider the risk of deploying the bin as ethically acceptable. On the other hand, one might still argue, that rescue forces (in our case the EOD team or first responding police forces) should always first and foremost protect themselves. The outcome of these ethical weightings is not least determined by national regulations and certain (also mostly national) morals and norms. However, the risk of deploying a blast attenuator bin has certainly to be considered in its ethical evaluation.

#### 4.1.2 Ethical Aspects Concerning the Accompanying Measures

Another possible benefit of a deployed bin that might be traded off against the risk of deploying it consists in the possibility of gathering forensic evidence. The EOD experts interviewed in D600.2 argued that the bin might prove helpful in preserving forensic evidence, which might – as we showed in D600.1A – constitute a benefit which has to be ethically weighed.

#### 4.1.3 Ethical Aspects Concerning the Decision-making Process

The risk of deploying a blast attenuator bin does certainly rise ethical questions concerning the decision making process in an IED incident. Of course, it is ethically relevant who decides if the risk of deploying the bin is acceptable and who has to accept the risk. However, these questions are no particularity of the blast attenuator bin but rather concern every neutralization



/ mitigation technique (admittedly with varying relevance). Therefore we do not discuss them in detail.

## ***4.2 Clearing Charges***

### **4.2.1 Ethical Aspects Concerning the Neutralization / Mitigation Procedure**



Clearing charges do only raise ethical questions of minor relevance. It has to be considered that clearing charges – being an explosive technique – do produce some risk of material damage to the surrounding. However, assuming that the IED does produce considerably more risk of material damage, the ethical weighting is relatively simple. It might be more complicated, if choosing a non-explosive neutralization technique also is possible. In that case one has to weight the effectiveness of clearing charges against the lower risk of material damage to the surroundings, caused by another neutralization strategy. However, these ethical weightings do strongly depend on the particular circumstances of the IED scenario and therefore cannot be conducted here.

Another ethical aspect of clearing charges might consist in the certain amount of high-explosive that has to be handled by the EOD personnel. But since all EOD experts interviewed in D600.2 agreed that this poses no additional problems for experienced staff, we do not discuss it in detail.

#### **4.2.2 Ethical Aspects Concerning the Accompanying Measures**

As we already argued, gathering forensic evidence is an ethically relevant accompanying measure in an IED incident. Since one might assume that clearing charges do destroy more parts of forensic evidence than other neutralization techniques, this aspect has to be considered in the ethical evaluation.

#### **4.2.3 Ethical Aspects Concerning the Decision-making Process**

As far as it is predictable until now, clearing charges do not raise significantly relevant ethical questions concerning the decision-making process in an IED incident.

### **4.3 High Power Lasers**

#### **4.3.1 Ethical Aspects Concerning the Neutralization / Mitigation Procedure**

As far as it is predictable until now, High Power Lasers do not raise significantly relevant ethical questions concerning the neutralization procedure itself.



### **4.3.2 Ethical Aspects Concerning the Accompanying Measures**

Although it is not possible to reliably project it in the current state of development, one might assume that High Power Lasers might necessitate larger evacuation distances than other IED countermeasures. This is due to the assumption, that the refraction caused by High Power Lasers can produce serious threat to the health of bystanders in a large area. This opinion is shared by EOD experts interviewed in D600.2.

As we argued in D600.1A, the need for larger evacuation distances constitutes a relevant ethical issue. This is up to the potential unintended consequences of the evacuation procedure itself. (See D600.1A chapter 5)

On the other hand, the assumption that High Power Lasers are able to preserve more pieces of forensic evidence from the IED has to be ethically weighed too.

### **4.3.3 Ethical Aspects Concerning the Decision-making Process**

As far as it is predictable until now, High Power Lasers do not raise significantly relevant ethical questions concerning the decision-making process in an IED incident.

## ***4.4 High Power Microwaves***

### **4.4.1 Ethical Aspects Concerning the Neutralization / Mitigation Procedure**

As far as it is predictable until now, there is only one relevant ethical issue concerning High Power Microwave IED neutralization. The EOD experts interviewed in D600.2 argued that the success of the High Power Microwave neutralization procedure might be not visible, due to the missing visible destruction of the IED. If that is correct, it might be ethically relevant, if High Power Microwaves are just used as preliminary measure (followed by another neutralization

technique) or if someone has to take the risk of visually inspecting the neutralization success. Since this issue strongly depends on circumstances not reliably projectable, we will not discuss it in further detail.

#### **4.4.2 Ethical Aspects Concerning the Accompanying Measures**

As we already argued, gathering forensic evidence is an ethically relevant accompanying measure in an IED incident. Since one might assume that High Power Microwaves are able to preserve more parts of forensic evidence than other neutralization techniques, this aspect has to be considered in their ethical evaluation.

#### **4.4.3 Ethical Aspects Concerning the Decision-making Process**

As far as it is predictable until now, High Power Microwaves do not raise significantly relevant ethical questions concerning the decision-making process in an IED incident.

### **4.5 Risk Analysis Tool**

#### **4.5.1 Ethical Aspects Concerning the Neutralization / Mitigation Technique**

Since it is no neutralization / mitigation technique in the narrower sense, the Risk Analysis Tool does – as far as it is predictable until now – not raise significantly relevant ethical questions concerning the neutralization / mitigation procedure itself.

#### 4.5.2 Ethical Aspects Concerning the Accompanying Measures

As long as the Risk Analysis Tool refrains from proposing evacuation distances, it does – as far as it is predictable until now – not raise significantly relevant ethical questions concerning the accompanying measures of an IED incident.

#### 4.5.3 Ethical Aspects Concerning the Decision-making Process

The ethical issues of the Risk Analysis Tool concerning the decision-making process in an IED incident are probably the ones depending most on the circumstances of the incident. Since the tool is designed to serve as one basis of decision-making it has to be held partly responsible for the outcome of decisions. This might raise different ethical questions.

In D600.1A we already argued, that since “in most parts of Europe the PIC [Police Incident Commander] remains in command of the overall operation [...]” even after the arrival of the EOD commander (EODC)<sup>3</sup>, the decision-making process constitutes a potential ethical problem area. There might be situations where the opinions of the PIC and the EODC differ on the question of what actions have to be taken. In that case, the distribution of responsibilities has to meet ethical requirements, for instance, to ensure that the final decisions implicate the lowest possible risk for society as well as for the EOD personal. That is also and especially relevant, if there are ‘externally’ provided procedures (e.g. provided by the Risk Analysis Tool) that approve certain strategies. Such standard procedures can thereby be either the cause or the solution to the ethical problem. If the provided standard procedure matches the circumstances of a particular IED incident correctly and approves the factually best strategy, it might, on one hand solve the ethical problem of differing assessments by PIC and EODC (or other responsible persons). On the other hand, if it does not completely match the specific circumstances, while implying to do so, it might lead to deficient decisions and therefore constitute an ethical problem. Furthermore, one might ask who is responsible if the execution of provided procedures leads to an unwanted outcome. At least for these reasons, the Risk Analysis Tool constitutes a potential ethical problem area itself.

Furthermore, it has to be considered, that the Risk Analysis Tool might help first responding police forces to improve and justify their decisions, for instance concerning the evacuation area. This opinion is partly shared by the EOD experts interviewed in D600.2. There it has been argued that first responding police forces tend to underestimate the evacuation needs in an IED incident due to their lack of experience and also due to the fact that larger evacuation areas lead to an exponentially higher requirement of police forces. In that case, the Risk Analysis Tool might even prove ethically helpful by providing evacuation distances.



## ***4.6 Blast Shield Walls***

### **4.6.1 Ethical Aspects Concerning the Neutralization / Mitigation Technique**

As far as it is predictable until now, Blast Shield Walls do not raise significantly relevant ethical questions concerning the neutralization / mitigation procedure itself – assuming that they do not underlie the RSP sequence reversion mentioned in chapter 4.1.1. Otherwise the ethical issues would correlate with the ones concerning the blast attenuator bin.

#### 4.6.2 Ethical Aspects Concerning the Accompanying Measures

As far as it is predictable until now, Blast Shield Walls do not raise significantly relevant ethical questions concerning the accompanying measures of an IED incident.

#### 4.6.3 Ethical Aspects Concerning the Decision-making Process

As far as it is predictable until now, Blast Shield Walls do not raise significantly relevant ethical questions concerning the decision-making process in an IED incident.

#### 4.6.4 Ethical Aspects Concerning the technology's potential societal impact

Although they are part of the ENCOUNTER research, Blast Shield Walls seem to differ from the other neutralization / mitigation techniques developed in ENCOUNTER. As also argued by the EOD experts interviewed in D600.2, Blast Shield Walls rather seem to provide *preventive* IED countermeasure capabilities. If that assumption is correct, their ethical evaluation does also differ significantly from the one of the other ENCOUNTER technologies. In that case, we would have to investigate the societal impact of the technology's preventive application. For example, one might argue that the massive visible preventive use of Blast Shield Walls in the public could lead to a societal climate of insecurity (cf. "societal chill", D600.1A chapter 5.1.4.). But since it is not reliably projectable, if and how Blast Shield Walls would be used preventively and since their potential preventive usage is not explicitly part of the ENCOUNTER research, we do not discuss this issue in detail.

## 5 Annex

### 5.1 D600.1A

#### 5.1.1 Summary

D600.1A aims to identify the main ethical areas of conflict in the IED context. Initially, the document discusses common problem areas within security ethics and how they relate to IED-incidents. Following this, a wide range analysis of ethical issues arising from IED-incidents forms the main part. In a final step we take a look at some meta-aspects of ethical research in ENCOUNTER.



### 5.1.2 Introduction

Annex I (DoW) of the ENCOUNTER Grant Agreement states, that WE610 will "investigate the ethical issues of the application of IED neutralization techniques"<sup>4</sup>. D600.1A documents the first stage of this investigation. In this phase we have identified the main ethical areas of conflict in the IED context based on the analysis of standard procedures of rendering safe a deployed IED, already available deliverables of other work packages and related work from the field of security ethics.

“Ethics” is a term that is commonly used for a wide range of different questions relating to a systematic approach towards individual and societal morals and norms.<sup>5</sup> Ethical research can therefore be defined in the following manner: it relates to the development of a systematic approach that allows the evaluation and modification of a given situation in the light of certain individual and societal morals and norms. Applied to WE610, this means that ethical research initially tries to systematically identify all aspects of IED neutralization techniques and procedures that are relevant for their ethical evaluation, or in other words, that may come into conflict with individual and societal morals and norms.

While ethical research also relates to the *formulation of solutions* to certain ethical problems (e.g. modifying given situations or, in our case, technologies appropriate to identified ethical requirements), the aim of D600.1A is only *to identify* ethical problem areas in a wider IED (countermeasure) context. Identifying general ethical issues will serve as an analysis framework for the upcoming systematic and detailed analysis and solution of ethical issues relating specifically to ENCOUNTER technologies and procedures which will be delivered in D600.1B

Before the investigation begins with a brief discussion of common issues of security ethics, a few words about the related work remain to be said. The ethics of IED countermeasures constitute a very special aspect of security ethics. While we have some related work in the field of ethical methodology in the security sector (even though this aspect is also quite in its infancy<sup>6</sup>) there is no nameable related work to the ethics of IED countermeasures. This absence of related research is another reason for starting the ethical research in ENCOUNTER with the aforementioned wide range analysis of ethical problem areas instead of discussing and solving specific and isolated ethical problems at this point.

### 5.1.3 Research Method

The methodology of this investigation is based on three main steps. In the first step we will describe common topics of security ethics (chapter 4). These descriptions will serve as instruments for analysis when we address the ethical problem areas in the IED (countermeasure) context, or "IED ethics" as we will call it henceforth (Chapter 5). In this second step we will split the case of an IED incident into different parts. These parts (decision-making process, IED neutralisation strategy / technology, accompanying measures) will then, on one hand, be tested for their relevance to the aforementioned common topics of



security ethics. On the other hand, we will thereby identify ethical problem areas which are not covered by these common topics. In a last step (chapter 6) we will outline some methodological issues which have to be dealt with when it comes to the in-depth analysis of and solution to certain ethical problems relating to ENCOUNTER technologies and procedures in D600.1B.

#### 5.1.4 Common Issues of Security Ethics

The investigation of IED ethics has to start with the question of if and how it relates to common issues of Security Ethics. Since, as we argued above, security ethics forms a relatively new and multidisciplinary field of research, there is no standard procedure or methodology. However, during the past years, some common topics of security ethics have emerged. In the following steps of the investigation we will briefly outline these common topics so that we can refer to them in the analysis in chapter 5.

##### *Pre-emptive character of security procedures*

The first aspect we will consider is the pre-emptive character of security procedures. It has been argued by Ammicht Quinn et al. (following Bruce Schneier and others<sup>7</sup>) that this aspect is actually a constitutive factor of security ethics or, at least, of the ethics of security technologies.<sup>8</sup> Although we do not regard the pre-emptive character of security measures as a condition *sine qua non* for their relevance to security ethics, we do agree that it is an important aspect which has to be considered. So what does that mean?

In order to meet modern security challenges like terrorism, and in the light of new technological capabilities, state authorities tend to shift security measures from the prosecution of criminal acts already committed to the investigation of the run-ups to such acts. It has been argued, that such security prevention is a paradigm shift with serious consequences. Johannes Masing, a judge at the Federal Constitutional Court of Germany and professor of public law at Freiburg University, argues that in the case of area-wide pre-emptive security measures without reasonable suspicion, the state authorities are in a position to distinguish between problematic and unproblematic exercise of personal and civil liberties and impose the necessity of justification on the citizen. The author then proceeds to argue that pre-emptive security measures (as long as they do not arise from a reasonable, concrete suspicion) have to be *selective, narrow in duration and scope, transparent, and judicially manageable* in order to meet democratic, constitutional and societal requirements.<sup>9</sup> In case we have to deal with pre-emptive security measures in IED ethics, we will use these categories to investigate potential ethical issues.

##### *Intrusion into privacy*

Another important problem area of common security ethics is the intrusion into privacy caused by security procedures. Volkmann argues, that "Privacy refers to specific spatial areas, parts of the human body and certain types of information that should be protected and

shielded from others in order to allow for respect and free development of an individual's personality."<sup>10</sup> In the project XP-DITE (also funded by FP7) he has elaborated a typology of ethical risks concerning the intrusion into privacy caused by security procedures. In fact, in XP-DITE this typology is used for the ethical evaluation of airport checkpoints (ACPs), but since Volkmann's considerations are based on an in-depth analysis of the extensive privacy debate in security ethics, we could use it for our purposes as well. Volkmann identifies four main types of privacy intrusions:

1. *Intrusion into spatial privacy* means that a procedure or technology intrudes into the private spaces of a person.
2. *Intrusion into bodily privacy* means that a person's body is exposed by a procedure or technology.
3. *Intrusion into private life* means that a person's chosen public appearance is undermined by a procedure or technology.
4. *Disclosure of information* means that a procedure or technology reveals someone's personal information and / or data to persons not directly involved in the security procedure.

We will consider these types of intrusions, when we check the aspects of an IED incident for potential ethical issues concerning privacy intrusions.

### ***Unintentional Consequences and Capabilities***

The third common topic of security ethics that we will discuss is the field of unintentional consequences and capabilities of security procedures and technologies. Unlike the two topics discussed above, this very aspect is until now not as elaborated as the previous ones. The main problem it relates to is that security technologies and procedures might be used in a way that was not originally intended when they were developed or implemented (“function creep”).

This could arise from different reasons. First, security technologies might have capabilities that are determined by their design but are not necessary for their original purpose. For example, a security camera might be rotatable although it was installed to observe a certain location like a cashpoint. In that case, it could, for instance, be used to observe people entering a building next to the cash point, which it was originally not intended for. Hence, the evaluation of the ethical and societal acceptability of this particular security measure has to consider the ability of observing the mentioned building and not only observing the cashpoint, irrespective of the fact that observing the cashpoint is the intended security purpose.

A second cause for unintended capabilities could be the combination of different technologies or procedures with different capabilities. For example, if traffic surveillance cameras that scan license plates (e.g. for toll collecting) are combined with cameras that observe public spaces and parking areas with the ability of face recognition, the combination of both could be used



to create movement profiles of individuals although this was not originally intended. Therefore, security ethics have to consider potential ethical issues arising from combined capabilities that emerge from the differing capabilities of technologies and procedures, which might be unproblematic individually.

Finally, there is a third aspect that has to be considered. There are not only unintended *capabilities* of security procedures and technologies but also unintended *consequences*. This aspect is even more extensive and harder to systemize than the aforementioned aspects since it cannot be investigated by the analysis of single given features (like technical capabilities of a single technology). For instance, it has been argued that security procedures like video surveillance (and other procedures) might create an effect of "societal chill", which arises from the public perception of a security measure and, importantly, is irrespective of factual ethical risks.<sup>11</sup>

The abovementioned considerations show that there is a broad and not yet systemized field of unintended consequences and capabilities of security procedures and technologies. Moreover, since this topic is currently not elaborated enough to deduce a consistent research method, we can, now, just keep in mind that we will have to check our object of investigation for such unintended aspects. Beyond that, we will have to solve this methodological problem before it comes to the in-depth analysis of ENCOUNTER ethics in D600.1B.



### 5.1.5 Ethical problem areas in the IED (countermeasure) context

In the next step of this investigation, we will now discuss certain aspects of an IED incident and their relevance to IED ethics. For that purpose, we do explicitly *not* define a scope of certain societal morals and norms which may be violated by IED countermeasures. Although this would normally be a systematic way for the identification of ethical issues, we argue that the choice of certain societal norms and morals (e.g. certain fundamental rights) would be epistemologically contingent (See chapter 6). Since the aim of this preliminary investigation is only the identification of *potential ethical problem areas* (as a guideline for the following in-depth analysis in D600.1B), we will only summarize issues that *may* be ethically relevant from a general point of view. However, as a matter of fact, a systematic research method for identification and solution of certain ethical problems has to be part of D600.1B.

For our analysis, we have split the entirety of procedures in case of an IED incident into three main parts that will be investigated separately. These are:

- Aspects of the decision-making process in case of an IED incident
- Accompanying measures in case of an IED incident
- The IED countermeasure strategy / technology itself

The Analysis thereby bases on the "Working document on actions taken to render safe a deployed IED" by James Warren, Blastech. We will refer to this document as the *RSP summary* from now on.

#### ***Ethical issues of the decision making process in case of IED incidents***

The first part of an IED incident that we will discuss consists in measures concerning the decision-making process. Thereby we will not only investigate the development of certain decisions (e.g. which countermeasure strategy has to be used) but also the distribution of responsibilities and risks.

The first potential ethical problem area we have identified is the question asking if the response to an IED incident is conducted by the police or the military. The *RSP summary* states that "assuming a state of peace or *in extremis* a state of civil unrest, police primacy will normally prevail and the use of explosive devices to kill, injure, harass or disrupt the normal peace will be dealt with as a criminal matter. Geographical or financial constraints will determine whether Police or military EOD teams will enact the response. These constraints will also be determined by threat level, assessment and intelligence."<sup>12</sup> Although one would intuitively suppose that the most efficient solution would be the most acceptable from an ethical point of view, this aspect can, in fact, lead to an ethical conflict at least in one way. There might be a situation where a military response will have the highest chances of success (e.g. due to technical capabilities) but the use of military forces conflicts with societal norms that strictly limit military operations during peacetime (e.g. like in Germany where even the use of military forces in cases of natural disasters like floods have already risen serious ethical



debates). Thus, in IED ethics we have to consider the choice between a military or a police response to an IED incident as a potential ethical problem area, for example if the use of a certain IED neutralisation technology is available to the military or the police only.

A second potential ethical problem area consists in the distribution of responsibilities and risks. The *RSP summary* states that "it is important to note that in most parts of Europe the PIC [Police Incident Commander] remains in command of the overall operation [...]" even after the arrival of the EOD commander (EODC).<sup>13</sup> The decision-making process therefore constitutes a potential ethical problem area. There might be situations where the opinions of the PIC and the EODC differ on the question of what actions have to be taken. In that case, the distribution of responsibilities has to meet ethical requirements, for instance, to ensure that the final decisions implicate the lowest possible risk for society as well as for the EOD personal. That is also and especially the case if there are provided standard procedures (e.g. due to the existence of a recommendation matrix of IED responses) that approve certain strategies. Such standard procedures can thereby be either the cause or the solution to the ethical problem. If the standard procedure matches the circumstances of a particular IED incident correctly and approves the factually best strategy, it might, on one hand solve the ethical problem of differing assessments by PIC and EODC (or other responsible persons). On the other hand, if it does not completely match the specific circumstances, while implying to do so, it might lead to deficient decisions and therefore constitute an ethical problem. Furthermore, one might ask who is responsible if the execution of standard procedures leads to an unwanted outcome. At least for these reasons, the recommendation matrix, which is planned to be developed in ENCOUNTER, constitutes a potential ethical problem area itself.

Finally, let's take a look at the relevance of the aforementioned common issues of security ethics to this particular part of an IED incident.

Since the case of an IED incident implies that there is already a criminal act in progress, the decision-making process and the distribution of responsibilities and risks do not bear direct relations *to the pre-emptive character of security measures*. However, there might be potential ethical problem areas with this character if we widen the focus. Not least because of the abovementioned aspect of police primacy vs. military response we could imagine a situation where military (or police) presence in public spaces may be strongly enlarged. In that case we would have to deal with ethical implications relating to the pre-emptive character of this measure. But since we do not consider this as very probable, and since ENCOUNTER does not imply such measures, we will not discuss this aspect in detail.

The same applies to *privacy intrusions*. There might be some conceivable situations where questions of privacy receive some importance, for instance if the risk assessment during an IED incident leads to an intrusion into the spatial privacy of residents or into the bodily privacy of passers-by. However, since we assume that these measures would in that case be

proportional to the given risk (and therefore would be reasonable) we do not discuss such considerations in detail.

Finally, we have to discuss the relevance of *unintentional consequences and capabilities* relating to the decision-making process and the distribution of responsibilities and risks. As already mentioned this is quite a broad field of questions, so we will just highlight some examples to illustrate the core problem. One unintentional consequence we have already discussed consists in the use of standard procedures that might lead to deficient decisions. In that case a security measure with an ethically unproblematic purpose (improvement of decision-making in case of an IED incident) might also lead to an ethically problematic outcome. This shows the core problem of unintentional consequences. Another example consists in the already mentioned potential enlargement of police or military presence in public spaces due to EOD requirements. Although this could originally have an ethically unproblematic purpose (minimizing the risk and the outcome of IED incidents) it could have both unintentional consequences and capabilities. On one hand, massive police or military presence might for instance lead to a serious change in individual behaviour in public spaces (societal chill). On the other hand, there is a wide range of conceivable originally unintentional *capabilities* of massive military or police presence in public spaces. Finally, in order to avoid misunderstandings: we do not believe the previous example to be likely, especially not caused by the ENCOUNTER research. Its aim is only to illustrate the core problem of unintentional consequences and capabilities and its relevance to IED ethics in general.

### ***Ethical issues of accompanying measures in case of IED incidents***

In case of an IED incident, actions are taken that do not directly relate to the neutralization of the IED. We have identified two of these actions which constitute potential ethical problem areas: *the evacuation of civilians* on one hand, and *the collecting of evidence* on the other hand.

#### ***Evacuation of Civilians***

The *RSP summary* states, that one of the first actions taken by security personal in case of an IED incident is to "[...] clear the area of civilians to a safe distance as determined by national guidance. [...] The Police would then establish a secure cordon, to ensure minimum risk to life, and establish that only authorised personnel can enter the danger area."<sup>14</sup>

These measures have three main purposes. Firstly, as mentioned above, it ensures that the risk to life is minimized. Secondly, the evacuation of civilians serves the purpose of "[...] removing potential terrorist observers form the operational area, and helps to minimise the risk of command wires and telecoms being used to initiate the device."<sup>15</sup> And thirdly, the secure cordon prevents the terrorists from learning standard procedures of the EOD personnel. All these purposes would intuitively legitimate the evacuation of civilians from a certain area around the IED. However, some ethical problems may in fact arise from these measures.



The statement that the area is cleared to a "safe distance as determined by national guidance" implies that there is a standard procedure which will not or not totally be adapted to the specific circumstances of an IED incident, nor to the specific evacuation requirements of a certain neutralization technology. In that case, risks arising from the evacuation itself may outweigh the risks of a smaller evacuation distance. For example, if the national guidance for evacuation provides a distance that includes a hospital, the evacuation of patients in intensive care may be less ethically acceptable to society than the risk of terrorist observers hiding within the hospital. Certainly, if the hospital (and the persons inside) is in fact vulnerable to the IED, the weighing has to be changed. Above all, potential differences in the evacuation requirements of certain neutralization technologies have to be considered too.

This shows that the evacuation of civilians from a certain area around a deployed IED constitutes a potential ethical problem area that has to be considered by IED ethics. Thereby one has to keep in mind the flexibility or rigidity of standard procedures as well as the different evacuation needs of certain neutralization technologies and strategies.

Let's take a look at how the evacuation of civilians relates to common issues of security ethics. The evacuation of civilians is factually a preventive measure. But, as we will show, it is not in the abovementioned sense of *the pre-emptive character of security measures*. The ethically problematic character of pre-emptive security measures arises, as argued above, from the lack of reasonable suspicion of a concrete, imminent criminal act or threat. Since the evacuation of civilians – as long as it serves the prevention of hazards – is a direct response to such an act taking place, its pre-emptive character does not constitute an ethical problem itself. If, otherwise, the purpose of evacuation consists of removing terrorists from the IED scene (to prevent them from intervention and learning) there might be less reasonable suspicion (depending on the scenario), which may justify the measure. However, in that case, the measures do still overall comply with Masing's abovementioned requirements for ethically unproblematic pre-emptive measures. So we can finally say that the evacuation of civilians does not relate to the ethical issues, arising from the pre-emptive character of security measures.

Concerning *privacy intrusions*, we can state the following: the evacuation of civilians can definitely violate the privacy of the persons evacuated. For example, if security forces have to clear buildings, they may intrude into the spatial privacy of residents. But, as in case of the pre-emptive character of security measures (and many other cases of security ethics), the ethical acceptability also depends on the proportionality of security measures and risks. Thus, we consider privacy intrusions in the context of evacuation procedures not as an ethical problem area of significance.

Finally we will turn towards *the unintentional consequences and capabilities* of the evacuation of civilians. As to unintentional consequences, we have already argued that the evacuation procedure itself may actually raise certain risks (e.g. the previously mentioned



hospital evacuation). These risks and other potential unintended consequences of the evacuation procedure have definitely to be considered by IED ethics. Concerning unintentional *capabilities*, we can say that there might be conceivable scenarios in which the evacuation procedure allows security forces to pursue an objective originally not intended. For instance, security forces might use the argument of an IED incident to search residents' houses. But since this would be a form of illegal misuse, rather than an unintended capability, we do not regard it as relevant to IED ethics. Therefore, and as unintended capabilities do rather relate to *technical* capabilities, we do not consider unintentional capabilities of the evacuation procedure as an ethical problem area of significance.

### ***Collecting Evidence***

Since the deployment of an IED is a criminal act, security forces also pursue the goal of collecting evidence, beside of neutralizing the IED. In this regard, the *RSP summary* states, that after the neutralization of an IED, "[...] the EODC will remove the bomb suit, brief, and then accompany the Police forensic officer to the area of interest. Explosives, residues, detonators, wiring, tape, photography and other items of contemporaneous evidence should be handled in accordance with EOD and police SOPs. [Standard Operating Procedures]"<sup>16</sup> The procedure for collecting evidence, as it is described above, does not constitute an ethical problem area. However, one might argue that there might be ethical issues concerning the purpose and process of collecting evidence if we think about additional measures in this regard. As we will show, there are especially two kinds of measures which could be ethically problematic.

The first one relates to the choice of the neutralization strategy. We have to act on the assumption, that different neutralization technologies or strategies will leave different pieces of evidence from the IED itself. In that case, one has to weigh the risk of using a certain strategy against the risk of 'losing' evidence, which would have been possible to collect in case of using another strategy. For example, there might be a situation in which a manual RSP (render safe procedure) would lead to essential evidence (and therefor might be essential to prevent future IED attacks) while a remote RSP (e.g. using a disruptor) will destroy this evidence completely. In that case (or in similar cases less clearly) collecting evidence becomes definitely relevant to IED ethics, since one has to weigh the risk of injuring the EOD personal (or material damage due to the usage of a less efficient neutralization technology) against the risk of potential further IED attacks conducted by the same offender(s).

The second aspect of collecting evidence which might constitute an ethical problem area, relates to the registration, interrogation and search of passers-by (or the "investigation of passers-by" as we will call it henceforth). Although such measures are not mentioned in the *RSP summary* they may be part of the security forces' response to an IED incident. But since they will, as far as we know by now, not be part of ENCOUNTER research, and since they do not relate directly to the application of IED neutralization technologies, we will not discuss

them in detail at this point. Nevertheless, they have to be kept in mind as an ethical problem area when it comes to the in-depth analysis of certain IED countermeasures that include such procedures.

Both ethical problem areas we identified in the field of collecting evidence, the potential choice of a certain neutralization strategy depending on the evidence they leave as well as the investigation of passers-by lastly have to be tested for their relevance to the common issues of security ethics. Concerning *the pre-emptive character of security measures*, we have to highlight in particular the investigation of passers-by. Such measures may have a pre-emptive character as long as they do not relate directly to the ongoing IED incident. This would, for instance, be the case if security forces gathered information about passers-by without reasonable suspicion that they were in some way involved in the ongoing IED incident, but to prepare for potential future incidents. The same applies to *privacy intrusions and unintended consequences and capabilities*. The latter issue, however, also relates to the potential choice of a certain IED strategy depending on the evidence it leaves. As we have argued above, certain destructive (and therefore potentially more efficient) neutralization strategies may have the unintended consequence of destroying evidence, while certain less destructive strategies may have the unintended consequence of a higher risk for EOD personal (and others). Either implies that this aspect has to be especially considered by IED ethics.

### ***Ethical issues of the IED neutralisation strategy / technology***

The last aspect of an IED incident that we will investigate is the IED neutralisation strategy, respectively technology. One, if not the main ethical problem area of this aspect of an IED incident consists, as we will show, in the weighing of the risk of potential injury or even loss of life against the risk of potential material damage. What we call neutralisation strategy is named Render Safe Procedure (RSP) in the *RSP summary*. There are three main RSPs mentioned in the *RSP summary*: remote, semi-remote and manual. Since there are conceivable scenarios that necessitate it, we will add another strategy to our investigation: the controlled detonation. Each of these strategies, as well as different neutralisation technologies, implies a certain risk for injuring EOD personnel and for material damage. Although the *RSP summary* mentions that the RSP will normally follow the sequence remote, semi-remote, manual, one could imagine certain scenarios that might, from an ethical point of view, suggest a different sequence or even a controlled detonation. On one hand, for instance, if there are persons in some way locked close to the IED, the use of a remote neutralisation strategy might be ethically problematic. On the other hand there might be a scenario where the danger zone (due to the type of IED or other reasons) is so large that even a remote RSP might disproportionately endanger the EOD personal. In that case one has to weigh the potential material damage of a controlled detonation against the risk of injuring EOD personal. These considerations show that the choice of a certain RSP (with its certain implications for the risk



of injuring EOD personal and respectively causing material damage) is an ethical problem area relevant to IED ethics. The same applies to the choice of a certain neutralisation technology with its corresponding attributes. Therefore, information on the question about how certain neutralisation technologies differ in this regard has to be provided by technical WPs of ENCOUNTER where possible, and has to be considered in the in-depth analysis of ENCOUNTER technologies in D600.1B.

Both the RSP and the neutralisation technology do furthermore constitute another ethical problem area, which already has been mentioned in chapter 5.2.1. There we have argued that the evacuation requirements of a certain RSP or neutralisation technology are ethically relevant due to the ethical relevance of the evacuation procedure itself. Information on the question of if and how certain RSPs and technologies differ regarding the necessary evacuation distance therefore has to be provided where possible by technical WPs of ENCOUNTER and has to be considered in the in-depth analysis on ENCOUNTER technologies in D600.1B.

Another ethical problem area constituted by RSP as well as the neutralisation technology has been mentioned in chapter 5.2.2. There we have argued that the amount of potential evidence that is left by a certain RSP or technology may be ethically relevant. Therefore, information in this regard has to be provided where possible by technical WPs of ENCOUNTER and has to be considered by D600.1B too.

Finally, we now have to test the RSP and neutralisation strategy for their relevance to common issues of security ethics. Concerning *the pre-emptive character of security measures* and the *intrusion into privacy* we can state briefly that they do not relate to the RSP or the neutralisation technology. Neither does the neutralisation of an IED have a pre-emptive character in the sense mentioned above, nor does the RSP or neutralisation technology intrude into anybody's privacy (at least most likely not in a disproportionate manner). Concerning *unintentional consequences and capabilities*, we have already mentioned the potential destruction of evidence, which might be an unintentional consequence of certain RSPs or technologies. Furthermore, unintentional consequences concerning the safety of a certain technology have to be considered (e.g. if the technology does harm EOD personal or surrounding material property in a disproportionate manner). Finally, certain neutralisation technologies possess certain technical features, what means that IED ethics definitely has to consider unintentional capabilities of such technologies. But since these technical features and potentially arising unintended capabilities relate to the specific attributes of a certain technology, they cannot be discussed in detail at this point. However, we have to keep in mind, that this is an ethical problem area that has to be considered in the in-depth analysis of ENCOUNTER technologies in D600.1B.



### 5.1.6 Methodological aspects of ethical research in ENCOUNTER

In this last chapter, we want to briefly outline some methodological aspects of ethical research in ENCOUNTER that have arisen during this investigation and that have to be considered in the upcoming work of WP600. First, we want to say a few words about our abdication of the use of certain societal and individual morals and norms as a standard of ethical evaluation. In chapter 5 we have argued that the choice of such certain morals and norms would be epistemologically contingent. So what does this mean? Ethical research often follows the path of taking certain morals and norms as standard of evaluation and testing given situations for conflicts with these morals and norms. Although this is a systematic approach, one might ask how the choice of certain morals and norms could be justified. If, for that purpose, we do choose the morals and norms we personally agree with, the research outcome must necessarily be subjective. Since the aim of rationalistic science is the inter subjectivity of methods and outcomes, this subjective research is epistemologically and methodologically not acceptable. To avoid this subjectivity, one might then utilise morals and norms which are widely accepted. Although this method is still epistemologically disputable, it does at least mitigate the problem. However, in that case, one might ask what does "widely accepted" in fact mean. Regarding a European research project like ENCOUNTER, we would have to find morals and norms that are accepted across European societies. This means that it is, for instance, not an option to deduce societal morals and norms from the national constitution, what is a common method in national investigations. At this point, one might object that there are in fact common societal morals and norms across Europe, expressed in the Charter of Fundamental Rights of the European Union, for instance. That is admittedly true, but beside the fact that this Charter has no full legal effect in the UK or Poland, we know, not just from the recent debates about the work of intelligence services, that these fundamental rights are applied and interpreted very differently across Europe. So again, what does widely accepted mean? To guard against misunderstandings: we do not argue that there are no common societal morals and norms shared across European societies. But what we are arguing is that they do not constitute a systematic standard of ethical evaluation or at least, if they should, they would have to be analysed in detail. And even if we could develop a systematic set of societal morals and norms commonly accepted across European societies this would still limit the inter subjectivity of this method to persons sharing these European ideals. One could (and probably has to) accept this, but from an epistemologically rationalistic point of view it is still insufficient. For that reason, in WP600, we will try to develop a rationalistic approach to IED ethics that is, on one hand, as independent as possible from construing morals and norms from certain legal documents and which does, on the other hand, elaborate the rationalistic character of morals and norms when it has to rely on them as a standard of ethical evaluation.

## 5.2 References

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- <sup>1</sup> **ENCOUNTER Grant Agreement, Annex I (DoW)**, page 21.
- <sup>2</sup> **Volkman, Sebastian (2013): Ethical and legal requirements for system design**, XP-DITE (D7.1), page 8.
- <sup>3</sup> **ENCOUNTER, Working document by James Warren, Blastech, on actions taken to render safe and emplaced IED**, page 3.
- <sup>4</sup> **ENCOUNTER Grant Agreement, Annex I (DoW)**, page 21.
- <sup>5</sup> **Volkman, Sebastian (2013): Ethical and legal requirements for system design**, XP-DITE (D7.1), page 8.
- <sup>6</sup> **Cf. Weidemann, Stefan (in press): Das Verhältnis von Sicherheit und Freiheit als politikwissenschaftliches Forschungsfeld. Ein Versuch über empirisch-analytische und normative Politikwissenschaft im Sicherheitssektor**, in: Gander, Hans-Helmuth; Riescher, Gisela (ed.): Sicherheit und offene Gesellschaft. Herausforderungen, Methoden und Praxis einer gesellschaftspolitischen Sicherheitsforschung, Baden-Baden: Nomos (Sicherheit und Gesellschaft. Freiburger Studien des Centre for Security and Society, vol. 7), page 43-76. **See also: Volkman, Sebastian (in press): Angewandte Ethik für öffentliche Sicherheit: Versuch der Bestimmung einer Bereichsethik**, in: Gander, Hans-Helmuth; Riescher, Gisela (ed.): Sicherheit und offene Gesellschaft. Herausforderungen, Methoden und Praxis einer gesellschaftspolitischen Sicherheitsforschung, Baden-Baden: Nomos (Sicherheit und Gesellschaft. Freiburger Studien des Centre for Security and Society, vol. 7), page 13-42.
- <sup>7</sup> **Cf. Schneier, Bruce (2006): Beyond Fear: Thinking Sensibly About Security in an Uncertain World**. New York: Copernicus Books.
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- <sup>9</sup> **Cf. Masing, Johannes (2012): Die Ambivalenz von Sicherheit und Freiheit**, in: Gander, Hans-Helmuth; et al. (ed.): Resilienz in der offenen Gesellschaft. Symposium des Centre for Security and Society, Baden-Baden: Nomos (Sicherheit und Gesellschaft. Freiburger Studien des Centre for Security and Society, vol. 1), page 51-52.
- <sup>10</sup> **Volkman, Sebastian (2013): Ethical and legal requirements for system design**, XP-DITE (D7.1), page 15.
- <sup>11</sup> **Cf. Volkman, Sebastian (2013): Ethical and legal requirements for system design**, XP-DITE (D7.1), page 26.
- <sup>12</sup> **ENCOUNTER, Working document by James Warren, Blastech, on actions taken to render safe and emplaced IED**, page 1.
- <sup>13</sup> **ENCOUNTER, Working document by James Warren, Blastech, on actions taken to render safe and emplaced IED**, page 3.
- <sup>14</sup> **ENCOUNTER, Working document by James Warren, Blastech, on actions taken to render safe and emplaced IED**, page 2.
- <sup>15</sup> *Ibid.*
- <sup>16</sup> **ENCOUNTER, Working document by James Warren, Blastech, on actions taken to render safe and emplaced IED**, page 10.



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