

...ETCETERA

EVALUATION OF CRITICAL AND EMERGING SECURITY TECHNOLOGIES
FOR THE ELABORATION OF A STRATEGIC RESEARCH AGENDA

DELIVERABLE D4.1 - Annex

Template for the In-Depth Technology Analysis of WP5

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Dissemination Level: PU

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1 About this Annex

In work package WP 4 of the Etcetera project a number of technologies was identified, that have implications for public security or security applications and are expected to lead to effects in years 2020 to 2030.

In work package WP5 selected technologies of this list will be analysed in depth independently by a variety of partners. In order to ensure that these analyses will have the same structure and will cover all aspects that are required for the subsequent assessment steps, a generic structure or template shall be prepared.

This annex defines the proposed structure of the in-depth analysis. In the following the intended content of the different sections in the technology analyses are described.

The proposed sections are

- "Technology Description"
- "Security Relevance"
- "Time Frame"
- "Application and Market Potential"
- "Ethical Consideration"
- "Technology Profile"

The length specification at the end of each section is based on the document format defined for Etcetera reports (Etcetera report document settings, font style Tahoma, 11 pt, simple line spacing). The total length of the document should be 8 – 10 pages, a minimum of 5 pages is required.

Throughout the technology analysis document the use of tables, graphic depictions, diagrams or pictures should be considered whenever helpful for understanding. In order to avoid legal issues concerning copyright, purely illustrative material should not be used. Captions should be based on style "Etcetera – TA – Caption" (e.g. "**Fig. 1.2:** This text is an example of a caption. (Source: name, paper or institution) ").

1.1 Technology Description

In this section a general definition or classification of the technology should be given and a discrimination from other technology, if applicable. Overall working principals should be explained. A few words on the historical development and the mutual impact by contemporary developments are helpful for assessment, as well as information on complementary or concurrent technology developments.

Length: 1 – 2 pages

1.2 Security Relevance

In this section obvious as well as intricate relations to security applications or public security issues should be discussed. It should be elaborated if and how security issues directly benefit from such a technology (i.e. research and development explicitly address security applications or security demand) or whether there is an indirect impact on security issues (e.g. general capability improvements like increased endurance of mobile devices). If this technology could help to eliminate a current or future security capability gap, such information should be emphasized here.

The usefulness for security applications as well as any misuse potential should be regarded in this section.

Length: 1 – 2 pages

1.3 Time Frame

This section should explain why the technology is judged as an “Emerging Technology”. The current technology maturity should be rated based on the three TR levels ‘Low’, ‘Medium’, ‘High’ as specified in ESRIF (see ESRIF, final report, page 19, 2009).

Expectations or statements from different sources concerning the future development of this technology should be cited and commented by the author. It should be judged when and how this technology might become relevant for security issues, either in a salutary or detrimental way. Since the focus of project Etcetera is the time frame years 2020 to 2030 it should be indicated whether or not the security relevance will arise during this period.

Length: ½ – 1 page

1.4 Application and Market Potential

Based on the explanations of section 1.2 it should be detailed, how this technology could help in facilitating security duties and responsibilities, respectively how it could enable a new quality or quantity of misuse. Concrete applications should be named and the difference between the current situation and future possibilities due to this new technology should be illustrated. Also societal trends should be regarded, which might have impact on or be influenced by this technology (e.g. take a look at how smartphones influence daily live today and are related to security issues).

Any information concerning estimated or collected market data with relation to this technology should be mentioned here. Especially statements on future expectations are helpful. Any outlook on the future market potential of this technology should be related to the information given in section 1.2. If there are statements on future market expectations that are consistent with or in contrast to statements on the future technology development given in section 1.2 this should be discussed here.

Length: 1 – 3 pages

1.5 Ethical Consideration

Please discuss here, whether there are ethical issues related to this technology. For example, in case this technology could be used to violate the privacy of persons or to threaten the security of communication processes. Another aspect could be related to production aspects of this technology, e.g. whether it is compliant to environmental or societal demands. Also the aspect of scarcity of resources could be important, as with the use of foods for synthesis of motor fuels.

Length: ½ - 1 pages

1.6 Technology Profile

This section sums up the most important findings of the technology analysis in keyword style. The categories correspond to section 1.1 to 1.5. Length: 1 page (mandatory)
In the following only examples for possible content are given.

- Technology Description
- «Technology name» is
 - ...
 - Application focus is ...
 - ...
 - Research is concentrated at [industry, universities, ...] ...
 - ...
 - ...
- Security Relevance
- «Technology name» has direct influence on ...
 - «Technology name» indirectly improves security applications by ...
 - Potential misuse could be ...
 - ...
- Time Frame
- TRL is ...
 - First applications in form of ... are expected around ...
 - ...
- Application and Market Potential
- «technology-name» can be used by [customers] for [application 1, 2, n ...]
 - It is the only solution suited to achieve
 - ...
 - Could replace current technology [...] with an estimated current market volume of ... billion dollar worldwide per year.
 - ...
- Ethical Consideration
- «technology-name» can be misused for ...
 - There are no ethical issues known for «technology-name»
 - «technology-name» today is widely accepted by the public.
 - ...