



Efectis France
Espace Technologique
Bâtiment Apollo
Route de l'Orme des Merisiers
F-91193 Saint-Aubin
Tél : 33 (0)1 60 13 83 80

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INCEPTION REPORT

Closing data gaps and paving the way for pan-European Fire Safety Efforts

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Directorate General For Internal Market, Industry, Entrepreneurship
and SMEs

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Prepared by:

Bundesanstalt für Materialforschung und –prüfung (BAM)
Centre for Fire Statistics of CTIF (CFS-CTIF)
Danish Institute of Fire and Security Technology (DBI)
Efectis - Consortium leader in the project
Lund University
National Fire Protection Association (NFPA)
School of Engineering, The University of Edinburgh
Dutch Burns Foundation - The European Fire Safety Alliance (EuroFSA)
Vereinigung zur Förderung des Deutschen Brandschutzes (VFDB)

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ABSTRACT

The European Commission has commissioned a study aiming at mapping the terminology used and existing data collected by the EU Member States regarding fire events, and to propose a common terminology and a method to collect the necessary data in each EU member state with a view to obtain meaningful datasets. This in turn would allow for legislative and other knowledge-based policy decision on fire safety at Member State and at EU level.

The extent of the study have been defined by the European Commission regarding the scope, tasks and coverage. In addition to covering the exiting practices in the EU Member States, the study will also identify the best practices outside the EU at least in the USA, Canada, Norway and Australia. The study will be implemented over a period of 17 months, with a draft final report expected for December 2021. This inception report presents the methodology and approach for the study, the work organisation, including the time schedule, as well as a description of the deliverables.

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1. INTRODUCTION

The European Commission's Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs has awarded a contract for "Closing data gaps and paving the way for pan-European Fire Safety Efforts" to a consortium composed of BAM, CFS-CTIF, DBI, Efectis, Lund University, NFPA, The University of Edinburgh, EuroFSA, and VFDB. The contract was signed on 23 July 2020 by Efectis (consortium leader) and the European Commission (contract number: contract SI2.830108). A kick-off meeting was held on 6 August 2020.

Contract conditions are specified through the following documents:

- Annex I - Tender specification (reference No 760/PP/GRO/PPA/19/11229 of 11/11/2019)
- Annex II - Tender of Efectis (reference No LCE2kvP9TSMIAfhQ of 20/01/2020)
- General conditions for the service contracts.

The purpose of the study is to map the terminology used and the data collected by the EU Member States regarding fire events, their human and material consequences, and to propose a common terminology and a methodology to collect the necessary data in each EU Member State with a view to obtain meaningful datasets based on standardised terms and definitions. This in turn would allow for knowledge-based decisions regarding fire safety at national and at EU level regarding buildings fires (i.e. houses, apartment blocks, office buildings, commercial buildings, hospitals, schools and kindergartens, elderly homes, etc.). The pilot project could lead to a potential subsequent preparatory action to launch EU-level actions and initiatives to support Member States' efforts for fire safety and fire prevention, including in their building renovation efforts, thereby supporting safety for Europeans as well as sustainable growth and job creation in Europe. In addition to covering the existing practices for fire safety terminology and data collection in the EU Member States the pilot project shall identify the best practices outside the EU at least in the USA, Canada, Norway and Australia. It shall also cover the existing fire safety terminology and data gathering harmonisation work within the EU and internationally.

The study will be implemented over a period of 17 months, with a draft final report expected for December 2021.

In the Tender Specifications, an Inception Report is required at the end of the Inception period. This report constitutes this deliverable. It focuses on a presentation of the methodology and is structured as follows:

- Chapter 2 sets out the proposed methodology for the various research areas to be addressed in the study (Task 0 to 7);
- Chapter 3 describes the overall project plan, highlighting team organisation, milestones and expected deliverables.

The next report to be delivered is the first progress report, scheduled for December 2020.

2. LIST OF ABBREVIATIONS

BAM	Bundesanstalt für Materialforschung und –prüfung
CFS-CTIF	Centre for Fire Statistics of CTIF
DBI	Danish Institute of Fire and Security Technology
EC	European Commission
EU	European Union
EuroFSA	European Fire Safety Alliance
LU	Lund University
MS	Member State
NFPA	National Fire Protection Association
PT	Project Team
UoE	The University of Edinburgh
VFDB	Vereinigung zur Förderung des Deutschen Brandschutzes

3. STUDY METHODOLOGY

3.1. TASK 0 – DIAGNOSTIC

The aim of this task is to provide an overview on existing fire statistical data, it is divided into four subtasks that are conducted in parallel, as they all start at the Kickoff (t₀) and end at t₀+5m. The main goals of each subtask are presents hereafter:

3.1.1. Task 0a - Terminology issues

Each country has different methods of data collection and analysis of fire related data. Hence, it is difficult to make direct comparison between countries. Although trends can still be studied within countries separately, it is difficult to pinpoint and to assess the effect of regulations and other fire safety measures or actions on improving the fire safety in regions, Member States and more broadly in the EU. This is why in this subtask we will provide an overview of the current situation in Europe regarding the type of data collected, and how they are defined and used in each country. This will be done by making a complete inventory of the terminology used and the fire data collected regarding fire causes, casualties, damages, fire safety, fire prevention etc, in each of the EU Member States and at least in the Norway, Australia, UK, USA and Canada.

For example, fire deaths are not counted the same way in all countries. Indeed, in some countries fire deaths are limited to casualties occurring on the location of the fire, whereas in other countries, fire deaths can be accounted for days after the fire. This type of difference in the definition can account for disparities between countries, or even within a same country, which are not identified nor quantified today. In some countries, due to the current lack of official definitions of terms and expressions for fire statistics, it is possible, and even probable, that differences exist in the definitions used by fire departments and regulators. All these type of disparities will be analysed with the aim to understand the learnings from each countries and to understand the difficulties that are encountered.

A first analysis of existing database and studies will be conducted, this includes extracting information from relevant standards, such as ISO 17755-1 & -2 and the statistics provided by World Fire Statistics Centre. Finally, by comparing all the definitions and the type of data collected including building related aspects, social aspects and financial aspects, we will be able to identify the most relevant aspects and highlight the important fire data that are missing in some countries.

3.1.2. Task 0b - Statistics collection issues

The work in this subtask will focus on identifying how data is collected in each country. Often data is collected by fire brigades, then is centralised and issued by a controlling body, however the exact process is often different from a country to another, which creates level of complexities in collecting the data and its analysis.

It is also important to understand the responsibilities of the fire department and their perimeters of activity as in some countries firefighting is not the sole activity of a fire department. Fire response organisation is also not the same everywhere, as it can be constituted of professionals, volunteers, or even military. Therefore, the point is to understand how data is collected, what are the competences of the persons reporting fire incidents, if there are different level of investigations

Other institutions also collect data (e.g. fire brigade, police, regulators, statistic offices and other authorities) and other public or private bodies (e.g. insurance companies, NGOs, etc.). Therefore it is important to examine the consistency and comparability of the data collected.h

As the collection methodology can evolve in time, this has an impact on the yearly trends. These aspects are important in order to better understand sources of disparities in data.

3.1.3. Task 0c - Statistics interpretation issues

In this subtask we aim to identify the purpose for which data is collected and who uses them. In some countries fire data can help elaborate budgets for fire departments or optimise the personnel and equipment, whereas in other countries such data can enable regulators' decision making process. However, due to the issues

identified in the previous subtasks, the interpretation of the data is not as straight forward as it might seem to be, and therefore should be considered carefully. In this section we will attempt to identify the causes and consequences of these interpretation issues and to pinpoint the limitations. We will also determine the methods used to fill the gaps where information is missing, or if there is follow-up to data collected (e.g. corrections, updates etc.), it should allow us to understand the limitation of the data and to which extent it can be interpreted.

3.1.4. Task 0d - Analyse existing data:

In this subtask, we will compile all relevant data for each country separately to see trends but we will also attempt to compare data between the countries of interest. The knowledge gained from the previous tasks will also allow us to determine the level of confidence of the data collected in each country, to understand the trends and to identify similarities and differences with data from other countries. Finally, we will compare the data collected with data from other domains (e.g. socio-economic data).

3.2. TASK 1 – TERMINOLOGY AND DATA COLLECTED SURVEY

This task aims to understand and examine the available fire statistics in the EU Member States collecting information about terminologies, type of data available and methodologies adopted in the various countries. This task will be developed considering the available terminology and methodology and creating a fire statistics survey to determine where data are missing or not publicly available. Non-EU countries (e.g. Australia, Canada, USA, New Zealand, etc.) are also examined to increase awareness on current practice around the world to evaluate potential optimizations in Europe.

The terminology adopted to describe fire incidents in buildings will be examined according to eight major areas of interest:

1. *Building description*: residential and non-residential buildings. In particular, for non-residential buildings, a further analysis could classify the property types such as offices, hospitals, storages, industrial, etc. Moreover, building description includes the total floor area and number of floors;
2. *Fire causes*: cause, fire origin, item first ignited, and material first ignited;
3. *Fire consequences*: fire spread (vertically and horizontally), fire damage and total damage. Particular relevance is determined by the quantification of damage in m² or percentage of property damage and the type could be subdivided in fire, flame, smoke and water damage;
4. *Fatalities and casualties*: number of people physically affected by the fire incident;
5. *Fire prevention measures* available in place such as fire risk assessment and optimization, fire brigade in situ, passive fire protection;
6. *Fire safety measures* (active measures): alarm and automatic extinguishing systems;
7. *Fire response* of occupants (time from ignition to discovery and from discovery to call) and fire brigade (time from the notification of the call to the arrival at the fire scene)
8. *Fire costs*: direct and indirect cost of fire.

For the collection methodology, task 1 will be focusing on understanding how data are collected (at national or local level), managed and most of all which data are available and missing. Private and public bodies from fire brigades and national and local authorities, to insurance companies and other private bodies, will be contacted to gain the necessary information. The documentation related to each statistics will be also deeply examined to understand the structure of the collection report and appropriate references.

Examples of current fire statistics in EU countries and non-EU countries such as England published by the Home Office, USA by NFIRS, Canada by Statistics Canada and New Zealand by the New Zealand Fire Service, will support the development of a survey to evaluate where fire statistics databases are not publicly available and create a starting point of discussion for future development where data are not existing.

Task 1 will increase the awareness on fire statistics in EU and non-EU countries, available terminology and methodology and evaluation of analogies and differences between various statistics. However, potential risks are due to language barrier, possible confidentiality policies and private databases or not recent data.

Task 1 starts at t₀+2 (October) and ends in t₀+7 (February).

There are mainly five subtasks which are subdivided into three main groups: the first three sub-tasks represent the data collection, the fourth one the data analysis and the fifth one the outputs. The main goals of each subtask are presented hereafter:

3.2.1. Task 1a – Data collection in EU and non-EU States

- Identification of who collects and interprets fire incident data;
- Analysis of publicly available datasets;
- Evaluation of how data are collected, shared and interpreted;
- Evaluation of when and in which detail data are available;
- Comparison of terminologies and methodologies adopted.

3.2.2. Task 1b – Develop survey where fire statistics is not available

- Development of a survey to collect information where fire statistics is not publicly available to answer the questions introduced in Task 1a.

3.2.3. Task 1c – Contact respondents for follow-up questions

- Survey respondents will be contacted where necessary to obtain further information and guarantee completeness and accuracy.

3.2.4. Task 1d – Analyse results

- Understanding of analogies and differences in the terminologies, type of data recorded and collection methodologies;
- Identification of missing data and optimization measures:

3.2.5. Task 1e – Develop a table showing the detailed information for each country

- Creation of a summary table for all EU member states to coherently present the information gathered in Task 1.

The outputs generated by task 1 will be also used as inputs in task 2 for the analysis of data needed for decision making, task 3 for the data collection methodologies and task 4 for the creation of terminology definitions. The results obtained in task 1 will be presented in the:

- 1st Progress Report
- Final Report.

3.3. TASK 2 – DATA NEEDED FOR DECISION MAKING

The purpose of task 2, that is led by the European Fire Safety Alliance (EuroFSA), is to research what quantitative data (in conjunction with qualitative data) are required by the Member States and the European Union in order to carry out a fire prevention policy that is substantiated and responsible.

This policy includes the process of law-making, implementation and enforcement of fire safety and prevention. In order to indicate the required data, we will review the characteristics (and interaction between them) of the fire, the building and the persons that were present. Figure 1 shows how this review will be done and how the characteristics cohere.

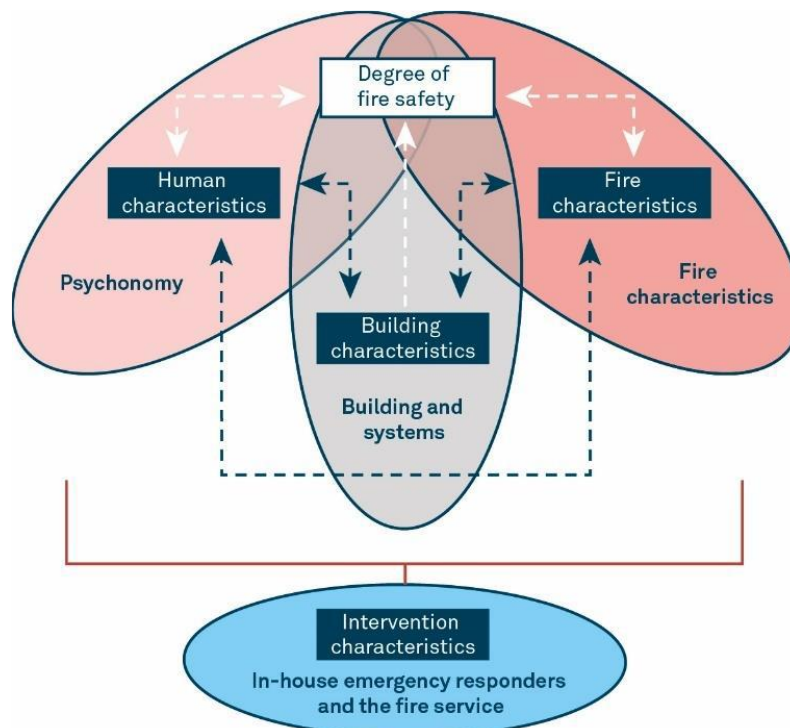


Figure 1. Model of influencing factors regarding the degree of fire safety

First step of this task is to draft a questionnaire for the Member States. They will be asked about their vision, opinion and experiences regarding the required data for forming and implementing the policy. The questionnaire will be constructed by EuroFSA in collaboration with the consortium partners University Lund, University Edinburgh and NFPA. Their experience with the data will be involved when constructing the questionnaire. The final version of the questionnaire will be submitted to the European Commission for approval.

After approval by the EC, the questionnaire will be send to Member State representatives. After receiving the completed questionnaire, EuroFSA, in collaboration with NFPA, will present an overview of the results. With this overview, the results can then be analysed by EuroFSA, University Lund, University Edinburgh, NFPA, Efectis and BAM. A substantiated conclusion and recommendations follow the analysis.

The use of so-called cross-links is important for the ability to form and carry out a policy. A cross-link is formed by combining and relating data. Main characteristics, such as the resident being self-reliant or not and the presence/absence of a smoke detector, do not directly provide enough input to conduct a policy. When combining these characteristics and identify a possible relationship between them, a cross-link can be made. For example, if the data on self-reliance of the resident and the functioning of a smoke detector are linked, this cross-link provides valuable information when making a policy.

The previous steps will be written down in a draft report and will be offered for reviewing to the internal and external reviewers. After processing their feedback, the final version of the report will be written.

The preparations for task 2 start on the 1st of September, 2020. In September, the plan of action will be written and submitted to the consortium partners, and discussed with them. On the 1st of October, the implementation begins. Approximately on the 15th of November, the draft of the questionnaire will be submitted to the European Commission. Before the 1st of March, this tasks final report will be presented.

Summarizing, task 2 consists of the following steps:

1. Writing the plan of action
2. Making a draft of the questionnaire
3. Constructing the consortium mailing list
4. Approval of the questionnaire by the European Commission

5. Sending the questionnaire
6. Making an overview of the completed questionnaire results
7. Analysing the results
8. Forming conclusions and recommendations
9. Writing draft report and submitting to reviewers
10. Writing and submitting final report

3.4. TASK 3 – DATA COLLECTION METHODOLOGIES

The aim of this task is to propose up to three alternative methods for collecting the fire data identified under Task 2. Task 2 is identifying what data EU decision makers need. It is critical to understand if they are expecting to have a full count of incidents (census data), estimates of the total number based on the data collected or rates (% of total data collected). All of these are based on the data collected but have different uncertainties and additional data will be needed e.g. to calculate scaling ratios for estimates.

How the data are generated is the first step in data collection. Data on fire incidents are traditionally collected by the fire service as part of their incident report. There are other sources of information that needs to be considered to complement data from the fire service such as fire investigation data (both from criminal and insurance investigations) and records of death certificates.

How the data are reported is normally a weak link in any data collection methodology. Firefighters are expected to collect the data and report them. How that reporting is expected to be done will significantly impact the uncertainty of the data. It is important in this context to understand that reporting data is an extra duty on the firefighters after they have worked on an incident. The easier the process of reporting the better the quality of data. Automation of data, e.g. by automatically getting the data from their existing Records Management System (RMS) will improve participation as well as quality.

The final step of data collection is storing the data. Task 2 should clarify if the expectations are to store the data locally, nationally or at European level. How the data are stored will impact how they can be accessed. All these issues will be considered carefully when proposing the methodologies. It is the intent to learn from, and be inspired by, what was learned in Task 0 and 1 on existing data collection methods.

To be able to compare the different methodologies a table will be provided showing for each of them their strengths/weaknesses taking into account the above points.

Cost estimates for each alternative method will be provided accompanied by a justified estimation on how much the cost may vary among Member States. The cost will be dependent on existing technology and therefore will take into account what was learned in Task 1. The cost estimate will consider potential development of software/apps, storage platforms needed and necessary onsite technology (smartphones, tablets, laptops, etc.)

Existing harmonised statistics on road accidents in EU will be studied in detail. Any lessons that can be learned from the road accidents statistics will be considered in the proposed methodologies and a comparison will be made.

Part of the challenge with data collection is data points missing in the reported data or entries coded as 'unknown'. The methodology to fill in these data can potentially skew the data and it is therefore very important to have statistically sound methodology for this. Through Task 0 and 1 information has been gathered on existing methodologies used and these will be considered if deemed appropriate.

Last part of this task is to analyse the uncertainty of the final data. Each of the steps outlined above will impact the uncertainty so the points of uncertainty will therefore be considered throughout the task.

Task 3 starts at t_0+4 and ends in t_0+13 .

The main goals of each subtask are presented hereafter:

- Propose 3 alternative methods for data collection
 - Type of data: Census, Estimates, Rates
 - Collection of data: Firefighters, surveys, fire investigators, death certificates

- Reporting of data: Lists, online, app, direct from RMS
 - Data storage: Local, regional, national, EU
- Prepare table for comparison
 - Identify differences in methodologies and their strengths and weaknesses.
- Cost estimate for each method
 - Identify pricing points from collection through storage.
 - Cost differences between member states
- Compare with existing harmonized statistics on road accidents
 - Type of data: Census, Estimates, Rates.
 - How data are collected, stored and processed.
 - Statistical methodologies used to reduce uncertainty.
- Methodologies to fill in missing/incomplete data
 - Methodologies used in existing data.
 - Appropriate methodology including scaling ratios for estimates.
- Uncertainty analysis / reliability of statistics
 - Identify points of uncertainty from collection through analysis.

3.5. TASK 4 – TERMINOLOGY DEFINITION

The aim of this task is to provide an overview of existing fire statistical data, to find and propose common terminology and definitions for all fire data collected, aiming for a common understanding within the EU member states.

Based on the terms and their probably different definitions in different countries, received from Tasks 1 and 2 of the project, the team will try to group them in categories (e.g. construction, materials, investigation etc.). The “unification work” will be distributed between the consortium members according to their special expertise / competences with the aim to elaborate and propose common definitions.

Using ISO TS 17755-2 as a starting point and comparing data collected in the EU member / non-member states with the terms in the standard, a taxonomy of terms including common definitions relevant in EU context will be proposed. Considering data collections issues dealt with in Tasks 2 and 3, an attempt will be made to understand which data is crucial/important and less important for stakeholders and for statistical use and group the terminology data accordingly.

Problems occurring with language translation and different definitions, laws, regulations etc. in different countries will be identified and published accordingly.

The task starts at t0 + 7m (March 2021) and end at t0 +13m (September 2021).

In order to come to a comprehensive, common terminology in this task it will be important to get access to a broad dataset of terms and definitions from many countries, collected in Task 1 and a understanding of importance of terms for the stakeholders, investigated in Task 2.

3.5.1. Task 4a – Group and classify terms and definitions from Task 1 and 2

- Identification of available terms and definition datasets from countries
- Analysis how terms can be grouped / classified
- Evaluation of issues with categorization by consortium members

3.5.2. Task 4b – Distribute groups of terms to consortium members according to their expertise

- Passing on bundles of terms and definitions to the different consortium members (according to task 4a) to be edited

3.5.3. Task 4c – Analyse problems in common terminology and find proposals for definitions

- Analysis of terms and different definitions, compare them with ISO, propose relevant definitions
- Distribute proposals to all task 4 members and get comments, evaluation

- Summing up terms, definitions and arising problems / difficulties

3.5.4. Task 4d – Attempt at grouping important / less important terms

- Related to task 2 an attempt to group terms also in relation to importance / relevance for stakeholders

The results generated will be published as an annex to the 2nd progress report.

3.6. TASK 5 – COST/BENEFIT ASSESSMENT METHODOLOGY

The objective of the task is to propose an appropriate cost/benefit assessment methodology/approach to be used by Member States and/or the European Commission to support regulatory and/or other policy decisions on fire safety. The requirements of the methodology are two-fold:

- First, the method should be able to be used by the Member States and/or the European Commission to evaluate potential future fire safety regulations or other policy decisions at national / EU level (also including societal aspects).
- Secondly the method must be detailed and complete, together with any criteria and parameter values to allow for its immediate application

The work plan is the following:

3.6.1. Study of performed cost benefit analyses in Europe

In this part of the analysis a literature study will be performed to investigate and obtain an overlook of the concept of cost-benefit. It is important also to define how the cost benefit will be used for decision making and examples from other areas will be used. Furthermore, there will be also a search performed whether and how many earlier studies of cost benefit were performed. Literature searches will be done with several search engines such as Google Research, web of science, etc.

In supplement with the literature searches there will also be input requested from the different partners as some of them have performed such type of studies. It is also recommended that such a question will be taken up in the questionnaire sent out to the member states as it is possible that some studies were performed and reported in local languages.

Known examples at this stage are for example studies performed in Sweden related to arson fires of schools (research project), Residential fires (research project), Smoke detectors (Min. of housing). In the arson fire project mentioned before [1] such a procedure was developed. The methodology started with investigating in fact statistics and case studies (detailed fire investigation reports) stored by the Swedish Contingency Agency in order to know the type of fires happening. With this information design fires were involved and with the information of technical systems a cost benefit analysis was performed leading to recommendations (see Figure 2). In this stage of the project, this method will be used as a starting point for discussions.

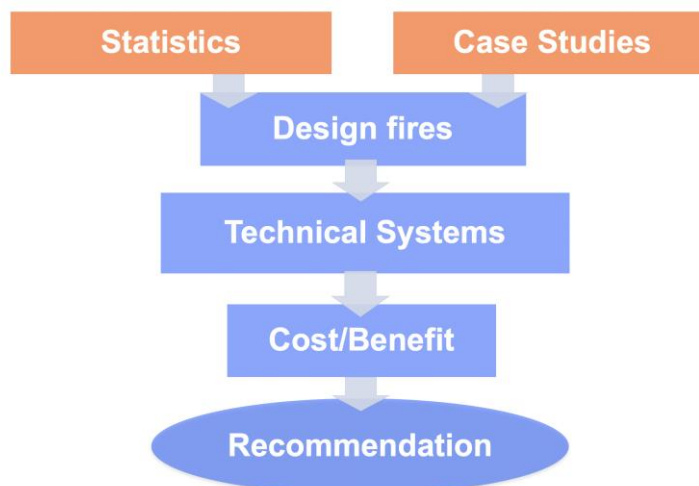


Figure 2. Methodology used in Sweden

3.6.2. Proposal of method with criteria and parameters

In the final step, a proposal for a methodology will be designed and documented including the procedure to be followed and also the criteria and parameters to be used. This information will be used as input to task 6.

The task will start at $t_0 + 10$ and end at $t_0 + 15$.

3.7. TASK 6 – CASE STUDIES

The objective of this task is to provide three case studies (to be agreed with the Commission services) where the cost/benefit assessment methodology/approach has been applied and to conduct a feasibility study for the method. The requirement for the case studies is that they show how the proposed method can be used to support regulatory and/or other policy decisions/choices. Another important factor is that it is important to discuss with the Commission services on the type of case studies as the feasibility needs to be investigated so that the method can be used for support of regulatory and/or other policy decisions on fire safety in Europe or in specific member countries.

The work plan is the following:

3.7.1. Define case studies taken into account the possible access of data

A first step will be to define the case studies to be used in this task. There are important aspects in this process. The first one is that the case studies should be consolidated with the commission so that they fulfill their requirements and preferences. In this process but even after a second important aspect will be whether the correct input data is available through the statistics as they will be used as one of the important input data for the study. It might be necessary to re-iterate this once again after these two aspects have been considered. It is also important to define the scope of the case studies so that there are clear objectives for each case study.

3.7.2. Conduct case studies

After selecting the case studies, data will be gathered and the method selected in task 5 will be applied.

3.7.3. Evaluate results of case studies

In this sub-task the results of the study will be evaluated not only with respect to the outcome of the cost benefit but also with respect of the feasibility of the method and whether the outcome can be used at European, national or regional level. An example of this local aspect is given in Figure 3. For the same case study mentioned above [1] it can be seen that for a specific benchmark building there are different results of benefit/cost when using different type of detection systems for spread of fire located near the façade of a school building.

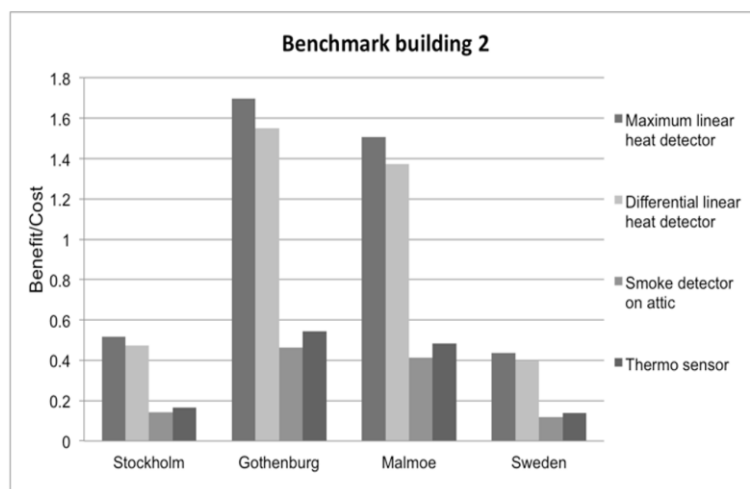


Figure 3. Example from case study in Sweden

3.7.4. Refine methodology if necessary

From the results of the case studies it might be necessary to adapt or to refine the methodology. Any changes in the methodology at this point should be motivated by the outcome of the case studies.

The task will be starting at $t_0 + 11$ and ending at $t_0 + 17$

3.8. TASK 7 – SUPPORT FOR THE FUTURE

Aim of this task is to develop proposals for [EU regulatory or non-regulatory instruments](#) and standardisation bodies, based on learnings from previous tasks and feedback received from the Steering Group and external review group meetings. This task is divided into four subtasks that are conducted in parallel.

3.8.1. Task 7a – Propose a data collection method using results of task 3 and input from external review group

An appropriate data collection method will be proposed after consulting with the European Commission and taking particularly into account contribution from DG ESTAT. The proposed methodology will then take form of a proposal for EU legislation to ensure that the statistical data will be collected in a common way in the Member States.

3.8.2. Task 7b - Propose test for [EU regulatory or non-regulatory instruments](#) to ensure statistical data will be collected in a common way in MS

The group will identify appropriate bodies in each of the EU Member States that can handle the collection of data, in particular, national statistical institutes. From the discussions with the different national bodies, divergence points and sources of confusion between countries will be detected. To address these issues, we will propose guidelines and pointers highlighting how to overcome these aspects. Proper translation and feedback from national bodies will be key for the success of this task.

3.8.3. Task 7c – Propose EU level actions to support fire safety and prevention efforts of MS

Based on the outcome from the previous tasks, the group will identify existing actions that can be exported at Member State level and will also aim at proposing EU-level actions to support fire safety and fire prevention efforts of Member States into the domestic environment, including in relation to renovation of buildings (e.g. a European fire safety awareness campaign).

3.8.4. Task 7d – Propose data collection templates and method as support to standardization

The developed guidelines mentioned in the previous tasks and subtask will be used as a basis for the development of working documents that can be provided to CEN TC127 for harmonized standards development; with option to ISO TC92/WG13 “Fire statistics” as support for the development of subsequent parts of ISO 17755 series.

4. PROJECT MANAGEMENT

An overview of the overall organisation of the different groups is provided in Figure 4:

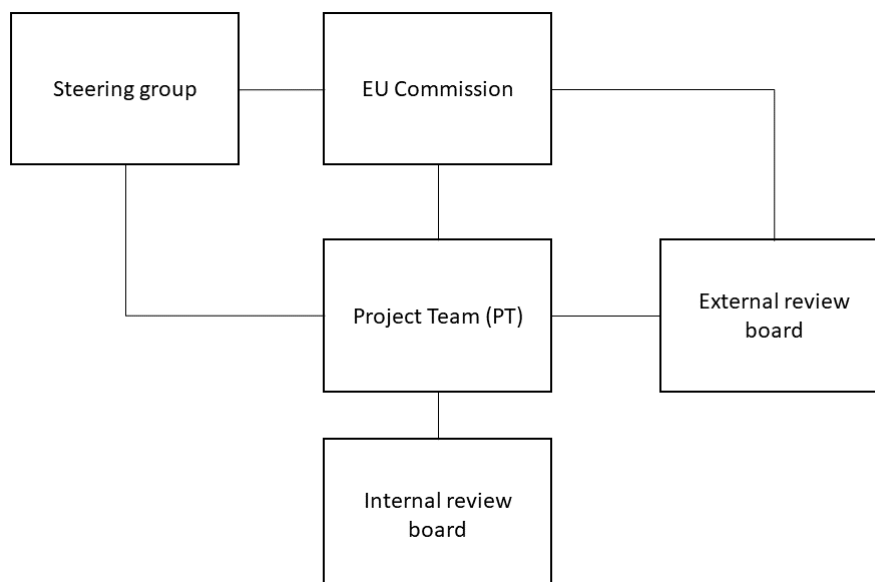


Figure 4. Project organisation diagram

4.1. PROJECT TEAM

The members of the Project Team all hold responsibilities for fulfilling the contract requirements. The Task leaders have responsibilities for managing the work carried out in their tasks, and task members have to contribute in their subtasks, as described in the table below in alphabetical order:

Table 1 – Task contents and members

Task	Subtask	Content	Task leader	Task members
0	0	Diagnostic	M. EL HOUSSAMI (Efectis)	
0	0a	Terminology issues		All consortium members
0	0b	Statistics collection issues		BAM, CFS-CTIF, DBI, Efectis, NFPA, UoE, VFDB,
0	0c	Statistics interpretation issues		All consortium members
0	0d	Analyse existing data		BAM, CFS-CTIF, Efectis, LU, UoE, VFDB
1	1	Terminology and data collected survey	M. MANES (UoE)	
1	1a	Overview of who collects fire incident data in each EU member state, USA, Canada, Norway and Australia		BAM, CFS-CTIF, DBI-, Efectis, NFPA, UoE, VFDB
1	1b	Develop and execute survey		BAM, CFS-CTIF, DBI-, Efectis, LU, NFPA, UoE, VFDB
1	1c	Contact respondents for follow up information.		BAM, CFS-CTIF, Efectis, UoE, VFDB
1	1d	Analyse results.		BAM, CFS-CTIF, Efectis, NFPA, VFDB
1	1e	Develop a table showing the detailed information for each country.		BAM, CFS-CTIF, LU, VFDB
2	2	Data needed for decision making	R. HAGEN (EFSA)	
2	2a	Develop a questionnaire about fire data needed for decision-making.		BAM, CFS-CTIF, EFSA, LU, UoE, VFDB

2	2b	After approval by the Commission, distribute questionnaire to agreed list of stakeholders.		CFS-CTIF, EFSA
2	2c	Analyse answers received.		CFS-CTIF, EFSA
2	2d	Propose fire data to be collected in all EU Member States.		BAM, Efectis, EFSA, LU, CFS-CTIF, UoE, VFDB
3	3	Data collection methodologies	B. MESSERSCHMIDT (NFPA)	
3	3a	Propose 3 alternative methods for data collection		BAM, CFS-CTIF, NFPA, UoE, VDB
3	3b	Prepare table for comparison		LU, CFS-CTIF, NFPA, VFDB
3	3c	Cost estimate for each method		CFS-CTIF, NFPA,
3	3d	Compare with existing harmonized statistics on road accidents		EFSA
3	3e	Methodologies to fill in missing/incomplete data		CFS-CTIF, Efectis, LU, NFPA, UoE,
3	3f	Uncertainty analysis / reliability of statistics		CFS-CTIF, Efectis, LU, UoE,
4	4	Propose common terminology definitions for all fire data to be collected	F. GRONE (DBI)	All consortium members
5	5	cost/benefit assessment methodology to support policy decisions	P. Van Hees (LU)	LU
6	6	Three case studies using cost/benefit assessment methodology.	P. Van Hees (LU)	LU
7	7	Support for the future	M. EL HOUSSAMI (Efectis)	
7	7a	Propose an appropriate data collection method using results of task 3 and input from Steering Group.		BAM, CFS-CTIF, Efectis, NFPA, VFDB
7	7b	Propose test for EU legislation to ensure that the statistical data will be collected in a common way in the Member States.		BAM, CFS-CTIF, Efectis, LU, VFDB
7	7c	Propose EU level actions fire safety and prevention efforts of Member States.		BAM, CFS-CTIF, DBI, Efectis, EFSA, VFDB
7	7d	Propose data collection templates and method as support to standardization		BAM, CFS-CTIF, Efectis, LU, NFPA, VFDB
8	8	Reporting	M. EL HOUSSAMI (Efectis)	BAM, CFS-CTIF, Efectis, LU, NFPA, UoE, VFDB

4.2. INTERNAL REVIEW BOARD

An internal review board will be convened, and it will function alongside the consortium for the whole duration of the project. In the consortium's experience, reviewing documents by a large steering group can be a challenge. Therefore, it is proposed to keep the internal review board to as small number of participants as it is practicable and to identify those individuals with an overarching vision of the project. The primary functions of the internal review board will therefore be:

- To offer input where the consortium encounters issues;
- To make technical, factual and sanity assessments;
- To independently review draft deliverables before they are presented to wider audience.

Members of the internal review board are listed in Table 2:

Table 2 - Internal review board

Members of the internal review board	Affiliation
I. BERTELSEN	DBI
E. GUILLAUME	Efectis
M. MCNAMEE	LU
B. MESSERSCHMIDT	NFPA
S. WELCH	UoE
K. BISKUP	EuroFSA

4.3. STEERING GROUP

Members of the Steering Group are selected by the European Commission. The function of the Steering Group will be to support the European Commission in steering the project and will involve main actors from different Member States and stakeholders.

Comments from the meetings with the Steering group will be reported in the minutes of each meeting. Reviews on the deliverables will be registered in a Comments Handling Document, detailing how we have addressed the issues raised.

4.4. EXTERNAL REVIEW BOARD

The external review board will be gather various stakeholders that have interest in the work. It will be constituted during the first 6 months of work, after this period, a meeting is planned every 4 months to check the progress and provide input. In order to motivate the identified stakeholders to actively participate in the project, their involvement is proposed throughout the whole duration of the project, rather than only at the end of the activities. In this manner, the work will not be prepared in isolation by the project team but will be continuously supported and validated by the stakeholders that will be part of the work since its early beginning. Whilst the constitution of the board is to be defined, the consortium recognises that it will likely need to interface with representatives from various authorities, stakeholders and non-governmental organizations and bodies such as the following organisations / professions:

- National statistics institutes,
- Local authorities,
- Fire & rescue services and associations,
- European Consumer Association (ANEC),
- Property owners associations
- Construction Product Europe,
- Fire Safe Europe,
- Insurance companies and/or associations,
- Fire suppression associations,
- Fire alarm associations,

Comments from these meetings will be accounted for in the same way that comments from the Steering group and noted in the a register of comments that will be maintained in a Comments Handling Document, detailing how we have addressed the issues raised.

4.5. WORK ORGANISATION

The detailed study schedule, which sets out the activities and deadlines for outputs as presented throughout this inception report is presented in Annex 1.

4.6. DELIVERABLES

All tasks are finalised through a report or a section for the final report. These reports are validated by the internal review group. Three main deliverables are planned:

- 1st Progress report will be issued after 7 months (December 2020). This report will include finalised work from task 0 and progress from tasks 1 and 2;

- 2nd Progress report will be issued after 13 months (June 2021). This report will include finalised work from tasks 1 and 2 and progress from tasks 3 and 4;
- Final Report will be issued after 17 months (December 2021). This report will include finalised work from all tasks.

The detailed study schedule is presented in Annex 2.

The project partners will acknowledge and respond to comments from the steering group and external review board by discussing the comments internally and maintaining a Comments Handling Document, which records these comments specifically. The layout of this document is presented in Annex 3. The document will be continuously updated throughout the whole project and will be included in the annex of the final report.

4.7. PROJECT CHALLENGES, RISKS AND LIMITATIONS

The COVID-19 pandemic introduces uncertainty. All members of the consortium have continued to operate in a COVID secure manner during the recent challenging times. All parties use Microsoft Teams and can deploy other platforms as appropriate. The use of centralised, online and secure data storage ensures that the risk of disruption to the consortium from a local outbreak or local lockdown restrictions is minimised.

There is a risk that members of the external review group become disengaged. This is particularly the case in large meetings with many voices, sometimes contradictory. To this end, the external review group constitution will be held throughout the whole duration of the project, complementing the Steering Group and enabling debate that are directed towards knowledge / expertise gaps not addressed within the consortium.

An outline of the main risks is provided in Table 3, where mitigation measures are proposed for each identified risk. This list will be kept up-to-date as the project progresses.

Additionally, Task leaders will maintain a list of challenges encountered during the project. This list will be updated and included in the annex of each deliverable.

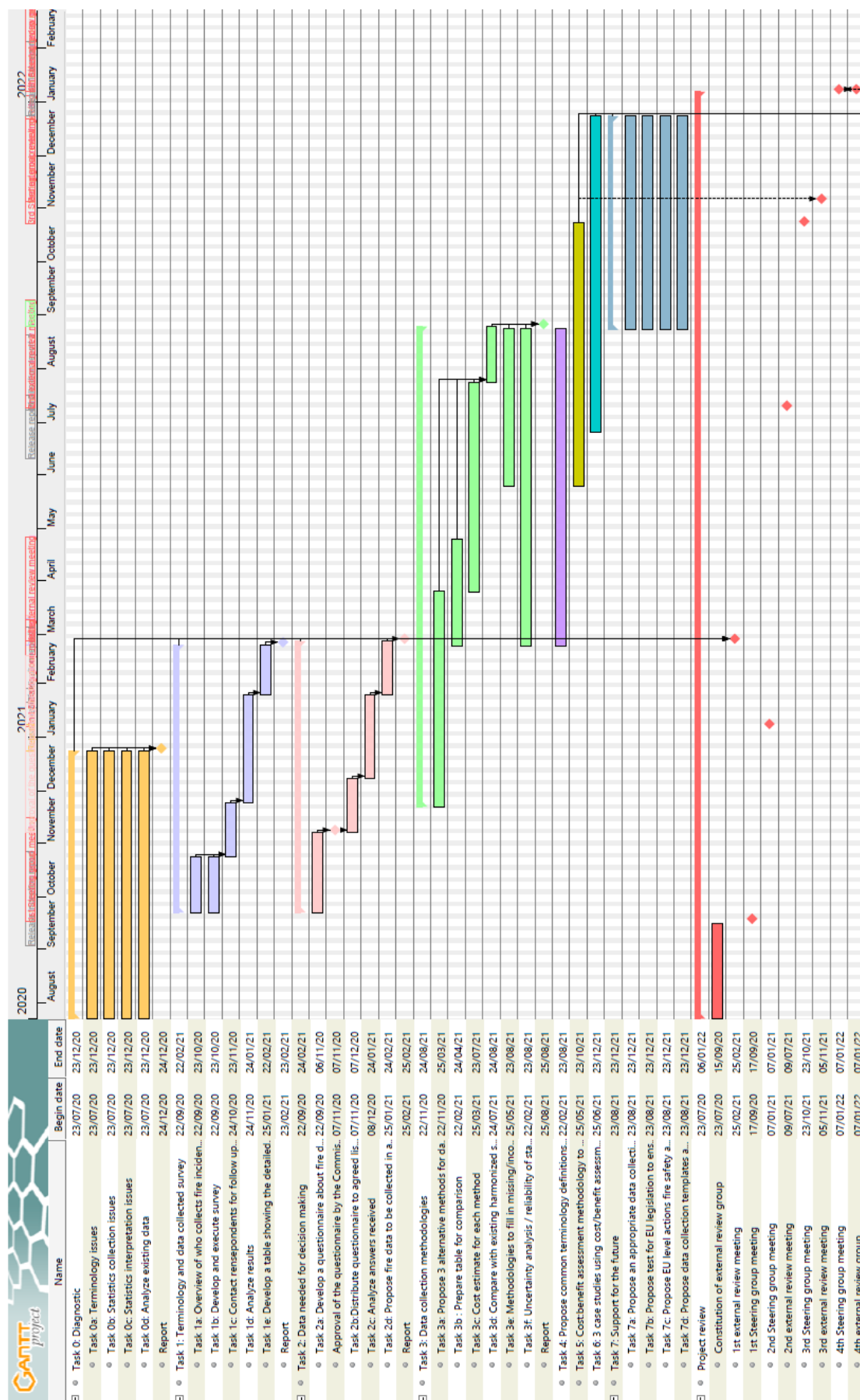
Table 3 - Risk analysis for each task

Task	Risk	Likelihood (1-5)	Consequences	Action
0	Lack of data in some EU countries	4	Some EU countries will not be covered in the analysis	Contact representatives and other public institutions
1 & 2	Lack/delay in response to questionnaires	3	Some EU countries will not be covered in the analysis	Establish contact as soon as possible, provide support letter from EC
1 & 2	Unclear answers in surveys	2	Unusable contribution	Make sure questions are explicit and provide example of answers. Follow-up unclear answers
4	Contradiction between existing terminology in MS and proposed terminology	5	Difficulties in proposing common definitions	Focus on high level and most important definitions
0-7	Language barriers	5	Some EU countries will not be covered in the analysis	Verify if EC can provide translation help in certain languages

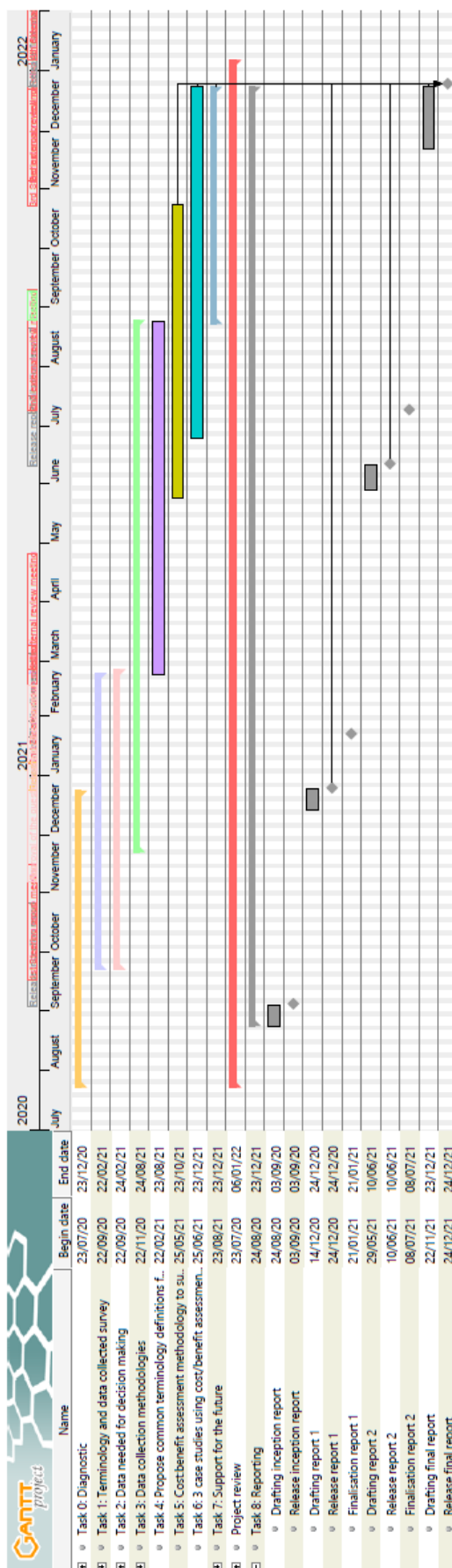
5. REFERENCES

- [1] Johansson N., Van Hees, P., Simonson McNamee M., Andersson, P., Jansson R. and Strömgren M., 2014. Technical Measures to Prevent and Mitigate the Consequences of Arson in School Buildings. Fire Safety Science 11: 531-543. 10.3801/IAFSS.FSS.11-531

ANNEX 1 - GANTT CHART FOR TASK PLANNING



ANNEX 2 - GANTT CHART FOR DELIVERABLES





ANNEX 3 - COMMENTS HANDLING DOCUMENT

Comments received up to 23 September 2020

In the following table are all written comments received during the project assembled.

An explanation to the columns used are as follows:

Column 1 – No: Numbering of comments

Column 2 – Body Reference: The body who have given the comment

Column 3 – Comment on document: A reference to which document the comment belongs

Column 4 – Paragraph/Figure/Table: A reference to which part of the document the comment belongs

Column 5 – Comment: The received comment

Column 6 – Proposed change by the consortium: A short description on how the comment has been handled

No	Body Reference	Comment on document	Paragraph/ Figure/ Table	Comment	Proposed change by consortium
1					
2					
3					



Efectis France
Espace Technologique
Bâtiment Apollo
Route de l'Orme des Merisiers
F-91193 Saint-Aubin
Tél : 33 (0)1 60 13 83 80

FINAL REPORT

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