SMART MATURE RESILIENCE

D6.5 DRAFT CEN WORKSHOP AGREEMENTS

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EXECUTIVE SUMMARY

The deliverable D6.5 'Draft CEN Workshop Agreements' is the last deliverable within Work Package 6 of the SMR project. It is based on the three previous deliverables – D6.2 'Summary of Standardization Potentials', D6.3 'European Workshop Report' and D6.4 'Proposal for CEN Workshop Agreements' – and summarizes the three CEN Workshop Agreements (CWAs) initiated and developed within the SMR project. The present document gives an overview of the current development status, the envisaged content and the next steps obtained in each CEN Workshop.

The second chapter focuses on the CEN Workshop 92 'City Resilience Development – Operational Guidance'. The development plan of the CWA, the five steps that form the guideline as well as the finalization and publication of the document are described. It can be summarized that 23 organizations from eight different countries and backgrounds will probably develop in nine meetings the 'City Resilience Development – Operational Guidance' CWA.

The process for developing the CEN Workshop Agreement on the Maturity Model is described in chapter three. The chapter on the CEN Workshop 91 'City Resilience Development – Maturity Model' starts with an overview of the meetings that were held during the development and explains later on the structure, content and users as well as the finalization and publication of the document. It can be summarized that 22 organizations from eight different countries and backgrounds will probably develop in seven meetings the 'City Resilience Development – Maturity Model' CWA.

The fourth chapter on the CEN Workshop 88 'City Resilience Development – Information Portal' is structured like the other chapters before. First the development plan is introduced and then the matters of the Information Portal CWA as well as the next steps are described. It can be summarized that nine organizations from five different countries and backgrounds will probably develop in seven meetings the 'City Resilience Development – Information Portal' CWA. Furthermore it has to be acknowledged that the CWA was published for commenting on the CEN website in February 2018. Thereby the public had the opportunity to make content suggestions on the CWA.

Chapter five explains the application process and the reasons for becoming a liaison organization of *ISO/TC 268 'Sustainable Cities and Communities'* as well as the next steps.

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1. INTRODUCTION

The last deliverable of Work Package 6 'Standardization' of the SMR project (D6.5 'Draft CEN Workshop Agreements') focuses on the current status of the three envisaged CEN Workshop Agreements. The goal of this deliverable is to show the foreseen final output of the standardization activities, the three CEN Workshop Agreements: 'City Resilience Development – Operational Guidance', 'City Resilience Development – Maturity Model' and 'City Resilience Development – Information Portal'. The previous deliverable D6.4 'Proposal for CEN Workshop Agreements' was conducted out of the project plans of the CWAs and the current deliverable D6.5 shows extracts of the developed draft contents of the three CWAs. This deliverable gives only a first overview of the draft content of each CWA; since the documents are not yet finalized. All three finalized documents will be available as free downloads on the CEN Website.

The current status, the involved stakeholders, the description of content and the next steps are described for each CWA. Furthermore the connection to *CEN/TC 391 'Societal and Citizen Security'* and *ISO/TC 292 'Security and Resilience'* as well as the application to become a liaison organization of *ISO/TC 268 'Sustainable Cities and Communities'* is explained in this deliverable. The latter is important to already start to uplift the three CWAs on the European and international level, i.e. to feed the respective standardization committees with the content provided in the CWAs. Furthermore this documents shows that a great number of participants are part of the development group of the CWAs. To further disseminate the project results tier 3 and tier 4 cities were involved in the development of the CWAs as well as DRS-7 projects like RESOLUTE, RESILENS, IMPROVER and DARWIN as well as DRS-9 projects like RESIN and RESCCUE.

2. CEN WORKSHOP ON 'CITY RESILIENCE DEVELOPMENT – OPERATIONAL GUIDANCE'

2.1. CURRENT STATUS

During the development of the 'City Resilience Development – Operational Guidance' CWA a couple of physical and virtual meeting were held to ensure a coherent development of the document. The development of the CWA is still on track of the of the project plan. An overview of all held meetings is given in Table 1.

Table 1: List of meetings on the 'City Resilience Development – Operational Guidance' CWA

No.	Date	Description
1	September 2017	Preparation and publication of the project plan on the CEN website.
2	November 2017	Kick-off meeting of the CWA in Thessaloniki with a general introduction on the design rules, responsibilities and development process of a CWA.
3	November 2017	First web meeting on the structure and potential content of the CWA.
4	January 2018	Second web meeting on the CWA with a presentation of the current version and a discussion on the received comments from the group.
5	February 2018	The second physical meeting was held in Berlin. The meeting was aligned with the 'Regional Cluster Workshops' that also took place in Malaga, Kristiansand and Athens. The focus of these workshops was to receive feedback on the 'European Resilience Management Guideline' (ERMG) and the CWA (see deliverable D7.6 'Report on Stakeholder Workshop' for more information on the 'Regional Cluster Workshops'). The meeting in Berlin focused especially on the requirements and recommendations of the CWA.
6	February 2018	Third web meeting to discuss the latest version of the CWA. Furthermore the outcomes of the 'Regional Cluster Workshops' were presented.
7	March 2018	Third physical meeting aligned with the 'Stakeholder Workshop' of Work Package 7 in Brussels to further gather input from the city partners being part of the CEN Workshop.

8	March 2018	Fourth web meeting to discuss the latest version of the CWA.
9	April 2018	Fifth web meeting and the fourth physical meeting aligned with the 'Open European Day' in Bonn to finalize the document.

2.2. MEMBERS OF THE WORKSHOP

The temporary consortium that develops the CWA consists of 23 organizations from all over Europe. Table 2 gives an overview of all the members with their country origin, type of organization and gender. Figure 1 shows the percentage on the type of organizations being part of the CEN Workshop and Figure 2 gives a percentage overview on the country origin of the members.

Table 2: List of members on the 'City Resilience Development – Operational Guidance' CWA

No.	Organization	Type of Organization	Country	Gender
1	CERTH Thessaloniki	Academia	Greece	Female
2	City of Amman	Administration	Jordan	Female
3	City of Athens	Administration	Greece	Female
4	City of Bristol	Administration	United Kingdom	Female
5	City Of Glasgow	Administration	United Kingdom	Female
6	City of Kristiansand	Administration	Norway	Male
7	City of Malmö	Administration	Sweden	Female
8	City of Reykjavik	Administration	Island	Male
9	City of Riga	Administration	Latvia	Male
10	City of Rome	Administration	Italy	Male
11	City of San Sebastian	Administration	Spain	Female
12	City of Vejle	Administration	Denmark	Male
13	EC Joint Research Centre	Other	Italy	Female
14	Freelance Consultant	Consultancy	Germany	Male
15	GeoAdaptive	Consultancy	Italy	Male
16	Greater Manchester	Administration	United Kingdom	Male
17	ICLEI	Consultancy	Germany	Male + Female

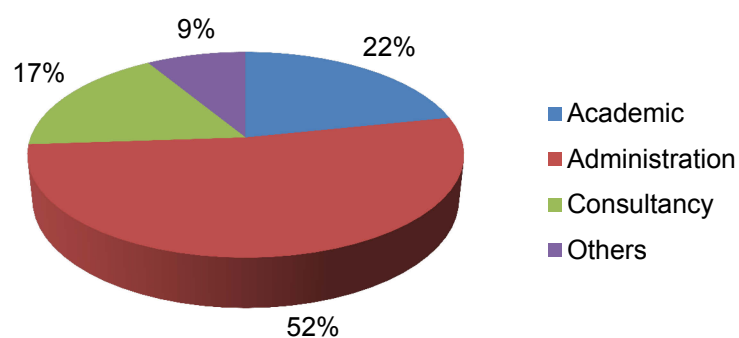| No.	Organization	Type of Organization	Country	Gender
18	Opticits (RESCCUE Project)	Consultancy	Spain	Male
19	Resilient Regions Association	Other	Sweden	Male
20	University of Agder (CIEN)	Academia	Norway	Female
21	University of Navarra (TECNUN)	Academia	Spain	Female
22	University of Strathclyde	Academia	United Kingdom	Male + Female
23	University of Warwick	Academia	United Kingdom	Male

Figure 1: Type of organization - 'City Resilience Development - Operational Guidance'
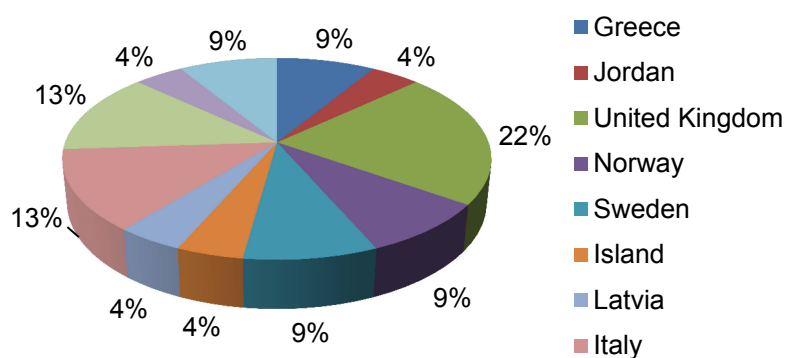

Figure 2: Member country origin - 'City Resilience Development - Operational Guidance'

2.3. CONTENT DESCRIPTION

The Operational Guidance is a framework that directs available resources towards well-defined goals, while securing transparency and the democratic principles of decision-making for city resilience development and planning. This framework makes use of five strategic resilience-building tools, placed within its steps, thus forming an iterative and systematic resilience-building process where cities may have different starting points and where they position themselves into different stages of resilience maturity.

The framework provides guidance and consultancy services to city practitioners and local governments in assessing their local resilience status. It also sets measurable targets together with local stakeholders, using the five tools to help the city further build local resilience and progress within the maturity stages and defines an operational framework that provides guidance and aims at training and supporting municipalities and relevant stakeholders in implementing an operational framework that enhances city resilience.

The Operational Guidance consists of five steps that shall be repeated in regular cycles; typically these cycles would be annual, but subject to specific needs of cities. Although the system follows a regular cycle, full revision shall be required once per political cycle or after an election period – and preferably at the outset - unless evaluation of achievements and results at the end of an annual cycle suggests reconsideration.

The five steps are the following:

1. Baseline review;
2. Risk awareness;
3. Co-creation of resilience strategy;
4. Implementation and monitoring and
5. Evaluation and reporting.

Two cross-cutting elements are required throughout the steps of the cycle:

- Communication and engagement as well as
- Organizational setup.

From the very beginning of the cycle, it is important to carefully plan who is involved in the process, what are their responsibilities and in what and how they can contribute. Getting activated as many actors and stakeholders, directly or indirectly involved in activities related to resilience, engaged with the process will make the effort a common interest and thereby more likely to succeed.

A well-functioning organizational setup of the Operational Guidance will exert decisive impact on the success of the undertaking. Cooperation with stakeholders can be considered as a cross-cutting element. In each of the five steps of the Operational Guidance, one or more of the following five tools are used:

1. Maturity Model (MM),
2. Risk Systemicity Questionnaire (RSQ),
3. Information Portal (IP),
4. City Resilience Dynamics (CRD) and the
5. Resilience Building Policies (RBP).

The document is intended to be used by policy and decision makers at city level and councillors working for climate adaptation and urban resilience, as well as to other city stakeholders working on resilience in their cities, (e.g. (examples but not limited to) critical infrastructure managers, service providers, emergency services, media, civil society associations, non-governmental organizations, academic and research institutions, consultancies).

Figure 3 shows the current list of content of the 'City Resilience Development – Operational Guidance' CWA.

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Figure 3: List of content - 'City Resilience Development - Operational Guidance'

2.4. NEXT STEPS

The elaboration on the final draft CWA lasts until the middle of April. Until then more good practices or examples from city partners to the different steps of the Operational Guidance will be included in the document. Furthermore a fine tuning of the content to a more practical approach that the target group/ city representatives will easier uptake the standard at city level will be worked on. The finalization and approval of the document will be in Bonn aligning with the 'Open European Day' on the 24th of April. Publication of the CWA will be done until May or the beginning of June 2018.

3. CEN WORKSHOP ON 'CITY RESILIENCE DEVELOPMENT – MATURITY MODEL'

3.1. CURRENT STATUS

During the development of the 'City Resilience Development – Maturity Model' CWA a couple of physical and virtual meeting were held to insure a coherent development of the document. The development of the CWA is still on track of the of the project plan. An overview of all the held meetings is given in Table 3.

Table 3: List of meetings on the 'City Resilience Development –Maturity Model' CWA

No.	Date	Description
1	September 2017	Preparation and publication of the project plan on the CEN website.
2	November 2017	Kick-off meeting of the CWA in Thessaloniki with a general introduction on the design rules, responsibilities and development process of a CWA.
3	November 2017	First web meeting on the structure and potential content of the CWA. Furthermore the design rules of standards were discussed in detail.
4	January 2018	Second web meeting on the CWA with the presentation of the current version and discussion on received comments from the group. Additionally the chapters were aligned and policies included.
5	February 2018	Third web meeting on the new structure of the document. The latest version was explained and the integration of indicators was discussed. The members were asked to review the document and make comments until the physical meeting in March.
6	March 2018	The second physical meeting was aligned with the 'Stakeholder Workshop' of Work Package 7 in Brussels to further gather input from the members being part of the CEN Workshop. The group had a deep discussion on every paragraph of the document, with the exception of the chapter on indicators.
7	April 2018	Fourth web meeting and the third physical meeting aligned with the 'Open European Day' in Bonn to finalize the document.

3.2. MEMBERS OF THE WORKSHOP

The temporary consortium that develops the CWA consists of 22 organizations from all over Europe. Table 4 gives an overview of all the members with their country origin, type of organization and gender. Figure 4 shows the percentage on the type of organizations being part of the CEN Workshop and Figure 5 gives a percentage overview on the country origin of the members.

Table 4: List of members on the 'City Resilience Development – Maturity Model' CWA

No.	Member	Type of Organization	Country	Gender
1	CERTH Thessaloniki	Academia	Greece	Female
2	City of Athens	Administration	Greece	Female
3	City of Bristol	Administration	United Kingdom	Female
4	City Of Glasgow	Administration	United Kingdom	Female
5	City of Kristiansand	Administration	Norway	Male
6	City of Malaga	Administration	Spain	Male
7	City of Malmö	Administration	Sweden	Female
8	City of Reykjavik	Administration	Island	Male
9	City of Riga	Administration	Latvia	Male
10	City of Rome	Administration	Italy	Male
11	City of San Sebastian	Administration	Spain	Female
12	City of Vejle	Administration	Denmark	Male
13	EC Joint Research Centre	Other	Italy	Female
14	GeoAdaptive	Consultancy	Italy	Male
15	ICLEI	Consultancy	Germany	Female
16	Opticits (RESCCUE Project)	Consultancy	Spain	Female
17	Resilient Regions Association	Other	Sweden	Male
18	Steinbeis R-TECH	Consultancy	Germany	Male
19	University of Agder (CIEM)	Academia	Norway	Female
20	University of Linköping	Academia	Sweden	Male

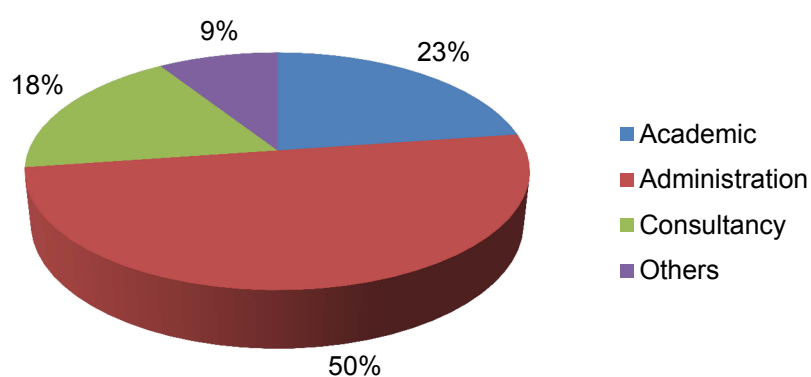| No.	Member	Type of Organization	Country	Gender
21	University of Navarra (TECNUN)	Academia	Spain	Male + Female
22	University of Strathclyde	Academia	United Kingdom	Male + Female

Figure 4: Type of organization - 'City Resilience Development - Maturity Model'
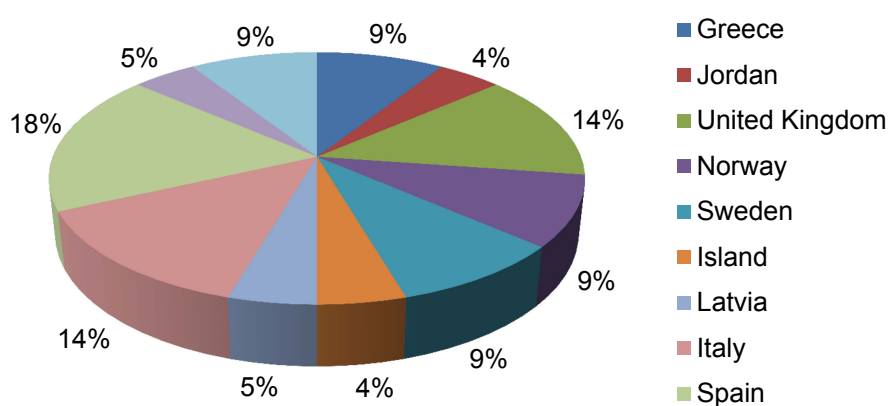

Figure 5: Member country origin - 'City Resilience Development - Maturity Model'

3.3. CONTENT DESCRIPTION

The Maturity Model is a strategic tool that provides a theoretical roadmap about how the resilience process of a city may be. It enables cities to assess their current maturity stage and to identify the policies to implement in order for the city to evolve and move to the next maturity stage. The Maturity Model can be used to assess and re-asses cities policies to diagnose a resilience maturity stage.

It has to be acknowledged that cities have been performing specific actions towards resilience in different ways. Some of them have been working for several years on the concept of resilience while others have just started. Therefore, the requirements of the cities are not the same. In fact, a city that has been developing resilience building activities for several years will require different activities than a city that has just started the path of developing this concept. Thus, the end users of the Maturity Model can use the model on the one hand, to identify areas that need to be improved and on the other hand, to assess their corresponding maturity stage considering the efforts made in the resilience building process. The policies of the Maturity Model can be compared to the policies and projects a city has already implemented or currently has in place to evaluate the level of resilience maturity.

Once a city identifies its corresponding maturity stage, the Maturity Model will help them through its policies to guide along their path in the resilience building process considering their future resilience demands and capacities. Thus, the Maturity Model can be used to plan and implement a long-term resilience journey, which goal is to strengthen cities in dealing with shocks and chronic stresses.

The document is intended to be used by policy and decision makers at city level and councilors working for resilience in their city, as well as to any other city stakeholders working on resilience (for example but not limited to: local, regional and national government, European policymakers, emergency services, critical infrastructure providers, public-private partnerships, NGOs, volunteers, the media, citizens, academic and scientific entities and international organizations.)

Overall the Maturity Model supports the user in the following areas:

- helps cities to assess their current resilience maturity stage;
- helps cities to prioritize resilience policy implementation actions according to the available funding;
- helps to attract new funding opportunities for specific measures;
- articulates the benefits and the added value of policies;
- helps cities to identify suitable policies to develop and implement resilience based on diagnosis and assessment;
- provides a point of reference for self-assessing the effectiveness of resilience developments and
- is useable as part of strategic planning.

The CWA is structured as followed. First of all, the factors that influence shocks and chronical stresses of cities are described. Then there is a general chapter that gives an overview of how to use the Maturity Model and the CWA. Next the resilience dimensions and sub dimensions of the Maturity Model are defined. Then each maturity stage is explained with the stakeholders involved and the policies that should be recognized. Figure 6 shows the current list of content of the 'City Resilience Development – Maturity Model' CWA.

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Figure 6: List of content - 'City Resilience Development - Maturity Model'

3.4. NEXT STEPS

The elaboration on the final draft CWA lasts until the middle of April. Until then the indicator chapter and the annex will be developed further and discussed with the members. The finalization and approval of the document will be in Bonn aligning with the 'Open European Day' on the 24th of April. Publication of the CWA will be done until May or the beginning of June 2018.

4. CEN WORKSHOP ON 'CITY RESILIENCE DEVELOPMENT – INFORMATION PORTAL'

4.1. CURRENT STATUS

During the development of the 'City Resilience Development – Information Portal' CWA a couple of virtual meeting were held to insure a coherent development of the document. The time schedule from the original project plan was adjusted, so that the finalization and approval of the CWA will be aligned with the other two CWAs. An overview of all the held meetings is given in Table 5.

Table 5: List of meetings on the 'City Resilience Development - Information Portal' CWA
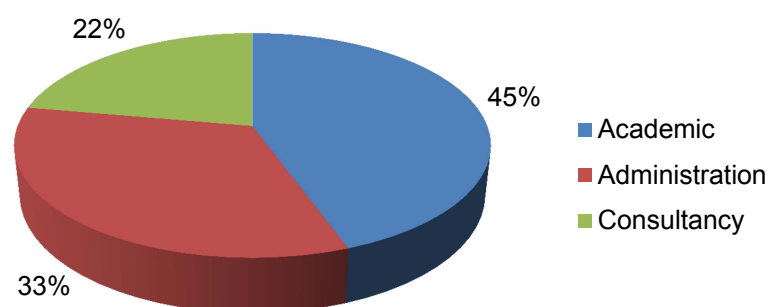
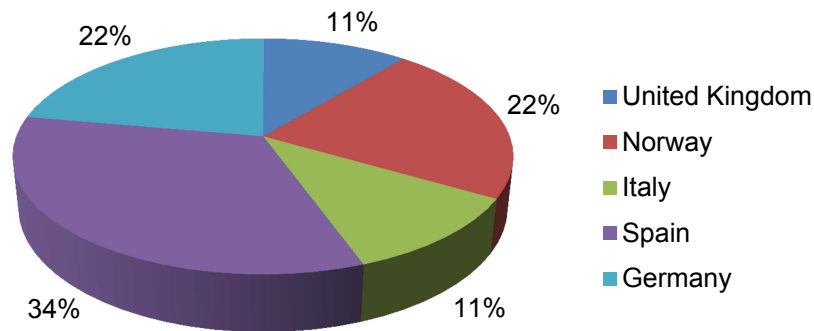| No.	Date	Description
1	May 2017	Preparation and publication of the project plan on the CEN website.
2	June 2017	Kick-off meeting of the CWA in Brussels with a general introduction on the design rules, responsibilities and development process of a CWA.
3	July 2017	First web meeting to discuss the general structure of the CWA.
4	August 2017	Second web meeting to discuss the contribution of city representatives. It was agreed upon that the city representatives mainly support the verification of the CWA.
5	September 2017	Third web meeting to discuss the terms and definitions as well as the chapter on the functions of an Information Portal.
6	November 2017	During the fourth web meeting the draft version of the CWA was discussed and afterwards the chairperson included the comments from the participants into to document.
7	January 2018	Fifth web meeting on the 'City Resilience Development – Information Portal' CWA. Finalization of the draft CWA through the group and decision to publish the draft CWA for one month on the website of the European Standardization Organization (CEN) for commenting.
8	February 2018	Publication of the draft CWA on the CEN website for commenting through the public.
9	April 2018	Sixth web meeting to finalize the document.

4.2. MEMBERS OF THE WORKSHOP

The temporary consortium that develops the CWA consists of 9 organizations from all over Europe. Table 6 gives an overview of all the members with their country origin, type of organization and gender. Figure 7 shows the percentage on the type of organizations being part of the CEN Workshop and Figure 8 gives a percentage overview on the country origin of the members.

Table 6: List of members on the 'City Resilience Development – Information Portal' CWA

No.	Member	Type of organization	Country	Gender
1	City of Glasgow	Administration	United Kingdom	Female
2	City of Kristiansand	Administration	Norway	Male
3	City of San Sebastian	Administration	Spain	Female
4	Fraunhofer IAO (RESOLUTE Project)	Academia	Germany	Male
5	ICLEI	Consultancy	Germany	Female
6	OptiCits (RESCCUE Project)	Consultancy	Spain	Male
7	University of Agder (CIEM)	Academia	Norway	Male + Female
8	University of Florence (RESOLUTE Project)	Academia	Italy	Male
9	University of Navarra (TECNUN)	Academia	Spain	Female

Figure 7: Type of organization - 'City Resilience Development - Information Portal'

Figure 8: Member country origin - 'City Resilience Development - Information Portal'

4.3. CONTENT DESCRIPTION

The CWA provides a list of requirements and recommendations for how municipalities can equip an information system that facilitates resilience building through collaboration, communication, and engagement. This marks the functional specification of a Resilience Information Portal. The portal is a platform for communication within a local government, between a local government and its overall stakeholders, and between a local government and citizens. Requirements aim towards a broad-purpose, easy-to-use platform that provides versatility and flexibility.

The document is intended to be used by information technology professionals and information technology decision-makers. It provides them with support in planning municipal information technology as well as operative help for the development process. The functional specification does not impose any specific paradigms, technological frameworks or third-party programs. The specification takes into account existing information technology infrastructure and following the recommendations can complement it. The specification provides for significant freedom and room for customization. This facilitates a technological solution that aligns with political decisions, particularly deriving from a local government's information technology strategy.

The CWA is structured as followed. First of all, the design goals and principles of a Resilience Information Portal are described. Then the main required and recommended criteria that characterize a Resilience Information Portal are defined. Next the technical product background and the main content, the functions per maturity stage, are described in greater detail. After that the basic data and performance requirements as well as the user interface and further quality requirements are characterized.

Figure 9 shows the current list of content of the 'City Resilience Development – Information Portal' CWA.

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Figure 9: List of content - 'City Resilience Development - Information Portal'

4.4. NEXT STEPS

The elaboration on the final draft CWA lasts until the end of March. The finalization and approval of the CWA will be aligned with the other two CWAs at the end of April. Publication of the CWA will be done until May or the beginning of June.

5. COOPERATION WITH EUROPEAN AND INTERNATIONAL STANDARDIZATION COMMITTEES

The topic of SMR, city resilience, relates to several standardization committees like for example *CEN/TC 391 'Societal and Citizen Security'*, *ISO/TC 268 'Sustainable Cities and Communities'* and *ISO/TC 292 'Security and Resilience'* or the CEN-CENELEC-ETSI *'Sector Forum on Smart and Sustainable Cities and Communities'*. The most suitable technical committee for SMR to create a liaison in

terms of city resilience is the ISO/TC 268, since CEN/TC 391 and ISO/TC 292 focus more on societal security. The ISO/TC 268 developed for example the following standards, which focus just like SMR on the sustainability and resilience of cities and communities:

- ISO 37100 Sustainable cities and communities - Vocabulary
- ISO 37101 Sustainable development in communities - Management system for sustainable development - Requirements with guidance for use
- ISO 37120 Sustainable development of communities - Indicators for city services and quality of life

Therefore SMR as a research project successfully applied to be a liaison organization of the International Standardization Organization (ISO), more precisely technical committee 268. Nevertheless the output of the SMR project was also promoted at the other technical committees. The SMR consortium is convinced that the developed solutions on the Operational Guidance, the Maturity Model and the Information Portal can be uptaken from a European to an International level. Thus, the consortium applied to be a Liaison organization. The application was send on the 23rd of January 2018 to the French Standardization Association (AFNOR), since they are the secretary of ISO/TC 268, and on the 23rd of March 2018 the Liaison was accepted.

The projects short goal with the Liaison is to present the results of the SMR research project at the next ISO/TC plenary meeting in Zhuhai (China) on the 15th of May 2018. Since the outcomes might interest several WGs within ISO/TC 268 a longer dedicated session is envisaged to take place. The medium goal for the liaison is to identify a Working Group (WG), where the knowledge of the SMR project would support standardization the most. Currently the WG1 'Management System Standards' was identified as a good fit. SMRs long term goal is to contribute with the CWAs to international standards that are completely or partially based on the three CWAs on City Resilience Development.

In the context of the Vienna Agreement SMR not only wishes to contribute on a European level, the research project also wants to promote the transfer of work from a European to an international level. Thereby SMR desires to promote the generated knowledge on city resilience and the created project results. Beyond this the research project wishes to keep on developing the results further, preferable on an international level. The benefits for the ISO/TC 268 are that they would not have to start from zero, if they decided to standardize a maturity model, an information portal or an operational guideline. Thus on a working level the content of the CWAs can be used as a basis for future international standards. Additionally the technical committee gains a top expert, since SMR generates profound knowledge in terms of city resilience through partners all over Europe. Thereby SMR and ISO/TC 2689 will both benefit from the cooperation.

6. CONCLUSION

At the beginning of the SMR project the development of one CWA was envisaged, but now the project will most likely publish three CWAs on city resilience development and will thereby make a noteworthy contribution to the field of city resilience in terms of standardization. As shown in Table 2, Table 4 and Table 6 the temporary consortiums that develop the CWAs not only consists of SMR project partners. That may be because the topic is of great interest and because there is currently no standards available. Furthermore the SMR project invited other DRS-7 projects like RESOLUTE, RESILENS, IMPROVER and DARWIN as well as DRS-9 projects like RESIN and RESCCUE to join the development of the CWAs (see D6.3 'European Workshop Report'). The RESOLUTE project actively participates in the development of the 'City Resilience Development – Information Portal' CWA and the RESCCUE project is active in all three CWAs. The discussions with the other research projects and city resilience stakeholders showed that there is further potential for research and standardization in terms of city resilience development. For now the three CWAs will be provided to the community this June and more CWAs from future research projects might follow. From this year on CWAs developed through European funded research projects will be available as free downloads on the CEN website.