Guideline for application of the ResiStand Assessment Framework, version 2.0 (RAF 2.0)

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ResiStand

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DIN NEN SFS TRILATERAL RESEARCH

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ResiStand Consortium		
GEO	Geowise Oy (the Coordinator)	Finland
EU VRi	European Virtual Institute for Integrated Risk Management	Germany
NEN	Stichting Nederlands Normalisatie-instituut	Netherlands
DIN	Deutsches Institut für Normung e.V.	Germany
SFS	Suomen Standardisoimisliitto SFS ry	Finland
TNO	Nederlandse Organisatie voor Toegepast Natuurwetenschappelijk Onderzoek	Netherlands
FhG-INT	Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V.-INT	Germany
VTT	Teknologian Tutkimuskeskus VTT Oy	Finland
FFI	Forsvarets Forskninginstitutt	Norway
ATOS	Atos Spain, S.A.	Spain
RINA	RINA Consulting	Italy
RISK	Steinbeis Advanced Risk Technologies GmbH	Germany
TRI	Trilateral Research & Consulting LLP	UK
TREE	Treelogic Telematica y Logica Racional para la Empresa Europea SL	Spain

1 Introduction

The ResiStand Assessment Framework (RAF) has been developed within the ResiStand project (see textbox below). The aim of this Excel tool is to support organisations or individuals in assessing the impact of a possible standardisation project and the feasibility of developing and implementing it in the domain of disaster resilience and crisis management. The RAF enables its users to systematically map the potential benefits of the standard, to check whether the standard is compliant with essential ethical, legal, social issues, and to consider the organisational conditions under which the standard will be developed and implemented.

It should be noted that the RAF does not replace existing procedures and forms or business plans, which are in place to evaluate standardisation requests. The RAF complements these to provide insight into the impact and feasibility of a standardisation activity in an early stage, in which organisations consider to formulate a proposal, thus to submit e.g. a New Work Item Proposal to a standardisation committee. The RAF is meant a kind of pre-assessment tool. Apart from insight into the impact and feasibility, it also shows the issues that still need attention. In addition, the RAF could be used to compare various standardisation proposals.

As the RAF is composed now, it is only applicable to disaster resilience and crisis management topics. With some adjustments the tool might become also applicable to other application areas in the future.

In ResiStand deliverable D1.3 Assessment framework for standardisation activities (chapter 5) [available at: www.resistand.eu] the background and the principles of the Excel-tool RAF have been described. It concerns the first version of the RAF (RAF 1.0) that has been used and tested in the course of 2017 by the consortium members and by external stakeholders at various ResiStand occasions; e.g., during workshops in Brussels (September) and in Dublin (November), and in a survey amongst ResiStand's advisory group members (June 2017). Based on feed-back and experiences from using the RAF, updated releases have been developed in an iterative way, which by the end of 2017 resulted in the improved version RAF 2.0.

2 RAF method and tool

Figure 1 shows the overall structure of the RAF. The RAF Excel tool consists of an initial tab with acknowledgements on the use of the RAF, followed by six worksheets/tabs: five input tabs and one output or assessment tab. The user can fill in all available information about the proposed standard in the five input tabs. However, it is not necessary to answer all questions to receive a holistic result. Based on the user input, the RAF automatically produces the assessment overview on the output tab.

The RAF offers the option to be filled in in three stages sequentially on top of each other:

- In stage 1 the user fills in the intake sheet. This provides, among other things, insight into the urgency aspect of having the proposed standard available, and some first textual information about the potential impact for various stakeholder categories.
- In the next stage (stage 2) the user completes the Impact tabs (Practitioners, Industry & Research) which provide detailed insight into the impact aspect of having the standard established.
- In the final stage (stage 3) the user addresses questions on relevant ethical, societal and legal issues in the concerned worksheet, and finally the Feasibility tab assessing the feasibility of successfully developing and implementing the proposed standard is filled in.

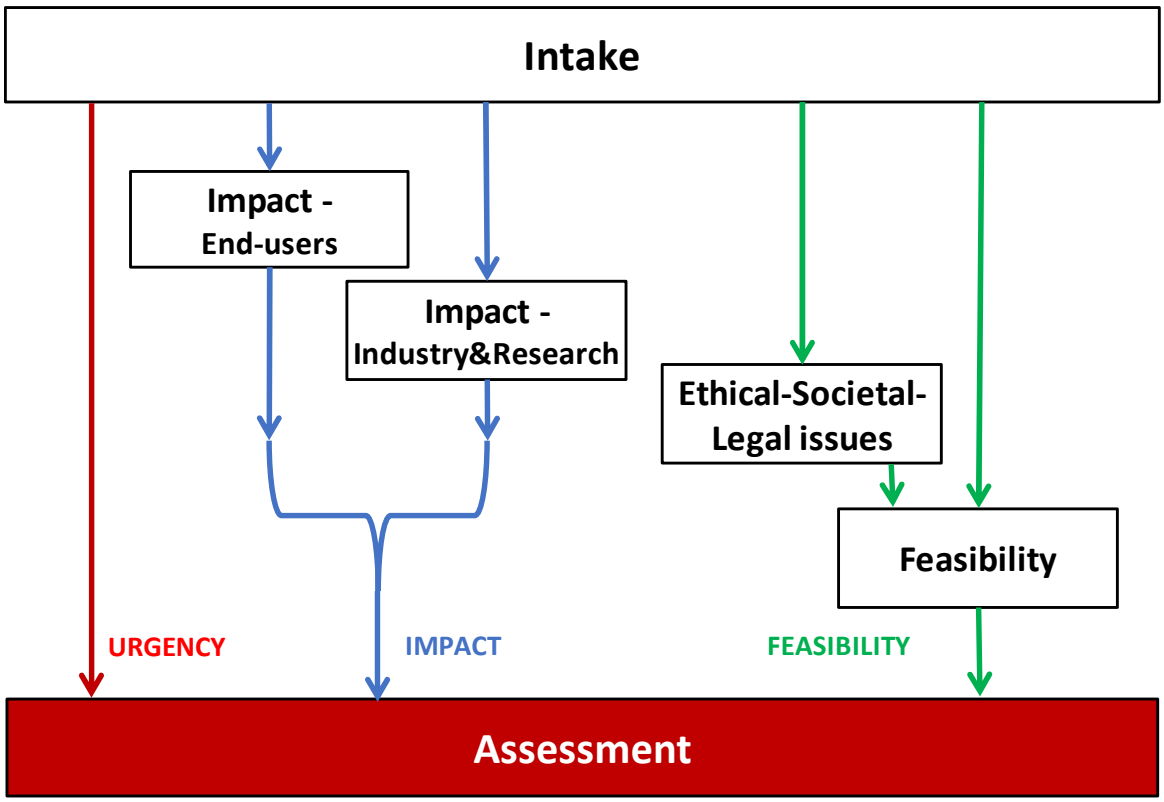


Figure 1: RAF structure

Input sheets

- Intake
  Description of the proposed standardisation activity (the initiators, the objectives of the standard, its scope and its target groups), an overview of the (types of) organisations that will or have to be involved in the development of the proposed standard, the urgency of having the standard available and a first description of its potential impact

- Impact – End-users
  Mapping of potential benefits for end-users or practitioners such as improved crisis management capabilities, reduction in losses of life, properties, improved responder safety, and cost savings

- Impact – Industry & Research
  Mapping of economic benefits (business opportunities) and of technological progress for industry and/or research organisations

- Ethical, Societal and Legal issues
  Listing potential effects of the standard on issues like avoidance of harm, privacy and solidarity

- Feasibility
  Investigation of the conditions for developing and implementing the standard: foundation, development perspectives, implementation perspectives, considerations of drawbacks

Output sheet

- Assessment
  Overall summary of the proposed standard based on input that has been provided by the user in the other sheets (see Figure 8)

3 Description of the input sheets

3.1 Intake

The intake concerns an overall description of the proposed standard and the involved stakeholders, its urgency, a first indication of its potential impact (benefits) as well as some development issues. On top of this tab two questions are asked to identify the standard. It concerns:

- Title or short name that characterises the standard
- Identification code

Proposed standardisation activity

The first section requests information that characterises the initiators and the scope of the proposed standard. Questions concern the:

- Names of the proposing organisations and/or consortia, including the stakeholder category they belong to; options are: End-users, Industry, Research, Policy makers, Citizens, and Hybrid
- Type of standard; options are: Standard, Technical Specification, Technical Report, and Workshop Agreement
- Description of the scope of the standard, including an optional description of examples to explicate the standard in more detail
- Compliance with European, national and/or regional legislation; two yes/no-questions, including the request for an explanation in case of a conflict
- Target groups for applying the standard; eight yes/no-questions

Potential impact and urgency

This section asks to describe the potential benefits for the various stakeholder categories, if any. In addition, a question is asked about the urgency of the standard ("When is it needed for implementation?"), including an explanation; 'urgency' options are:

- Very limited (not within 3 years)
- Limited (within 3 years)
- Moderate (within 2 years)
- High (within 1 year)
- Very high (as soon as possible)

Development

The third section concerns the following questions related to development:

- Types of stakeholders that should be involved in the development process
- Preferred leading type of stakeholder
- Description of barriers and constraints that are foreseen when developing and/or implementing the standard; in deliverable D1.3 the following examples of drivers and constraints are mentioned:
    - End-users in the disaster resilience domain tend to have a lack of awareness and interest in standardisation activities; they might consider the costs to develop and to implement new standards as too high. Also might the opinion of end-users on standardisation be biased by their government because of national interests such as loss of autonomy (independency) and support (protection) of national industries.
    - On the supply side (industry) it might concern threats and disadvantages such as high Investment costs related to perform standardisation activities, loss of unique knowledge (monopoly), the fact that the quality of the results of the standardisation process is not guaranteed, and that standardisation might open the door to certification, which is not always an incentive because it might result in additional un-wanted regulations.

Intake

ResiStand

Title of the proposed standard:	Shortname that characterises the standard
Identification number:	Topic - 001

Proposed standardisation activity

Proposing organisations or projects (at least 1 and up to 5):	**Organisation or project consortium**	**Stakeholder category**
	National police of …	End-users
	DIN	Industry
	TNO	Research
	H2020 ResiStand	Hybrid
	-	-

Type of standard:	Workshop Agreement
Scope of the standard:	This standard defines …
Example or illustration 1:	This European Standard describes good practice principles of drinking water supply management in the event of a crisis, including preparatory and follow-up measures.
Example or illustration 2:	ISO 22301:2012 specifies requirements to plan, establish, implement, operate, monitor, review, maintain and continually improve a documented management system to protect against, reduce the likelihood of

Compliance with legislation	**Compliant (Y/N)?**	**Explanation**
with European legislation:	Yes	If no, please, specify the conflict
with national and regional legislation:	Unknown	If no, please, specify the conflict

Target groups for applying the standard	**Target group (Y/N)?**	**Free space for additional comments**
First Responders:	Yes	First Responders from …
Governmental organisations:	No	
NGOs:	Unknown	
Industry/SMEs:	Yes	Geowise
Consultancy organisations:	No	
Research institutes:	Yes	TNO, FhG, VTT
Standardisation bodies:	Yes	DIN, NEN, SFS
Others:	No	If yes, please, specify

Potential impact and urgency

Benefits for stakeholder categories	**Description of who will benefit and in what way**
End-users:	…
Industry:	…
Research:	…
Policy makers:	…
Citizens:	…

Urgency of the standard: (when is it needed for implementation?)	Moderate (< 2 yrs)	Explain why

Development

Required stakeholders	**Required (Y/N)?**	**Free space to explain why their participation in the development is required**
First Responders:	Yes	…
Governmental organisations:	No	
NGOs:	Unknown	
Industry/SMEs:	Yes	
Consultancy organisations:	No	
Research institutes:	Yes	
Others:	No	If yes, please, specify

Preferred leading type of stakeholder:	Industry/SME	Explain why
Expected barriers and constraints:	…	

Other information

Additional remarks:	…

ResiStand Assessment Framework 2.0 TNO

Figure 2: RAF 2.0 – Intake tab

3.2 Impact – End-users

This tab concerns the mapping of potential benefits for end-users or practitioners such as improved disaster resilience and crisis management capabilities, reduction in losses of life, properties, improved responder safety, and cost savings for end-user organisations.

On top of this tab the user can indicate for which types of incidents and trends the proposed standard is of interest. He can do so by:

- Selecting the category of relevant incidents; options are: Incidents in general, Natural incidents, Technological incidents, Natural and Technological incidents, and Intentional incidents/ Attacks
- If applicable, selecting types of incidents that are of specific interest for the standard (options[1] are based on ResiStand deliverable D1.1 – *ResiStand Conceptual Framework*)
- Describing trends that are of importance to end-users and that are addressed by the proposed standard; this concerns subjects such as:
    - Increasing vulnerability of society
      For example
        - Aging of the population
        - Increasing urbanisation, especially in coastal areas and along main rivers
        - Increasing international mobility (due to globalisation)
        - Hyper connectivity, including the link between the 'real world' and the 'virtual world'
    - Changes in crises, disasters and their impact
      For example
        - Increasing number of natural disasters due to climate change (forest fires, extreme rainfall, etc.)
        - Increasing number of physical attacks
        - Increasing number of cyber incidents/attacks
        - Increase of cascading effects due to interdependencies (of e.g. critical infrastructures)
    - Developments in disaster resilience and crisis management
      For example
        - Increasing involvement of society (building on societal potential is required because the size of public services is decreasing)
        - Towards Network-Enabled Capabilities of emergency services and crisis partners (requiring information sharing/network governance)
        - Increasing need for analysis tools (big data)
        - Increasing importance of social media (for purposes to communicate with citizens, and also to meet the society's needs for transparency)

The remainder of this tab consists of four sections each dealing with one theme of interest. Every section contains a checklist of topics of which the user is asked to indicate to which extent they will be improved once the proposed standard has been established. Options are: None, Limited, Moderate, Considerable, and Great. In addition he can explain each answer.

[1] Options in alphabetical order are: Accident on water, Air crash, Animal stampede, Asteroids, Bomb attack, CBRN attack, Chemical spill, Coastal flood, Collapse of infrastructure, Cyber-attack, Cybercrime, Drinking water failure, Drought, Earthquake, Energy failure, Epidemics/Pandemics, Explosion, Extreme cold, Extreme heat, Fire (in build environment), Flash flood, Gas leak, Insect infestation, Landslide, Mass movement, Meteoroids/Comets, Nuclear accident, Rail accident, River flood, Road accident, Storm, Telecom/ICT failure, Tornado, Volcanic eruption, and Wildfire

For each of the four sections the overall score is the maximum value of the provided answers (this because it is not necessary or required that all aspects will improve by the proposed standard). The overall impact score on the top-right of this tab is determined by taking the average value of the four section scores.

Improvement of disaster resilience and crisis management capabilities (functions/tasks)

To express the expected impact of the proposed standard on improvement of disaster resilience and crisis management capabilities the user can select up to five capabilities of importance to this standard from[2]:

- Risk assessment, and Protection/Prevention (Mitigation phase)
- Contingency planning, Collaboration planning, Education & Training, Asset management, Detection/Surveillance, and Risk communication (Preparedness phase)
- Alerting (including 112), Crisis communication, Source fighting, Rescue operations, Law enforcement, Evacuation & Shelter, Medical treatment, Clear incident area, Basic needs supply, C4I, Situation Assessment, Collect incident data, Social media mining, Volunteer management, and Logistics (Response phase)
- Humanitarian recovery, Environment recovery, Economic recovery, and Re-establish infrastructure (Recovery phase)

Consequently, he should indicate for each of the selected capabilities to which extent he expects that the performance will be improved. Optionally, he can provide an explanation in the text box next to his answer.

If there are more than five capabilities of interest, the user can add information in the text box at the bottom of this section.

Improvement of the safety of society

To determine the potential improvement on disaster resilience and crisis management of the impact criteria from UNISDR are used[3]. It concerns expectations with respect to:

- Reduction in loss of life, injury, disease and/or improvement of physical, social, mental well-being
- Reduction in damage to property and/or destruction of assets
- Reduction in loss of services
- Reduced social, economic disruption
- Reduced environmental degradation

Improvement of responder safety

This section deals with health and safety aspects of (first) responders. Questions on improvement concern improvements with respect to their:

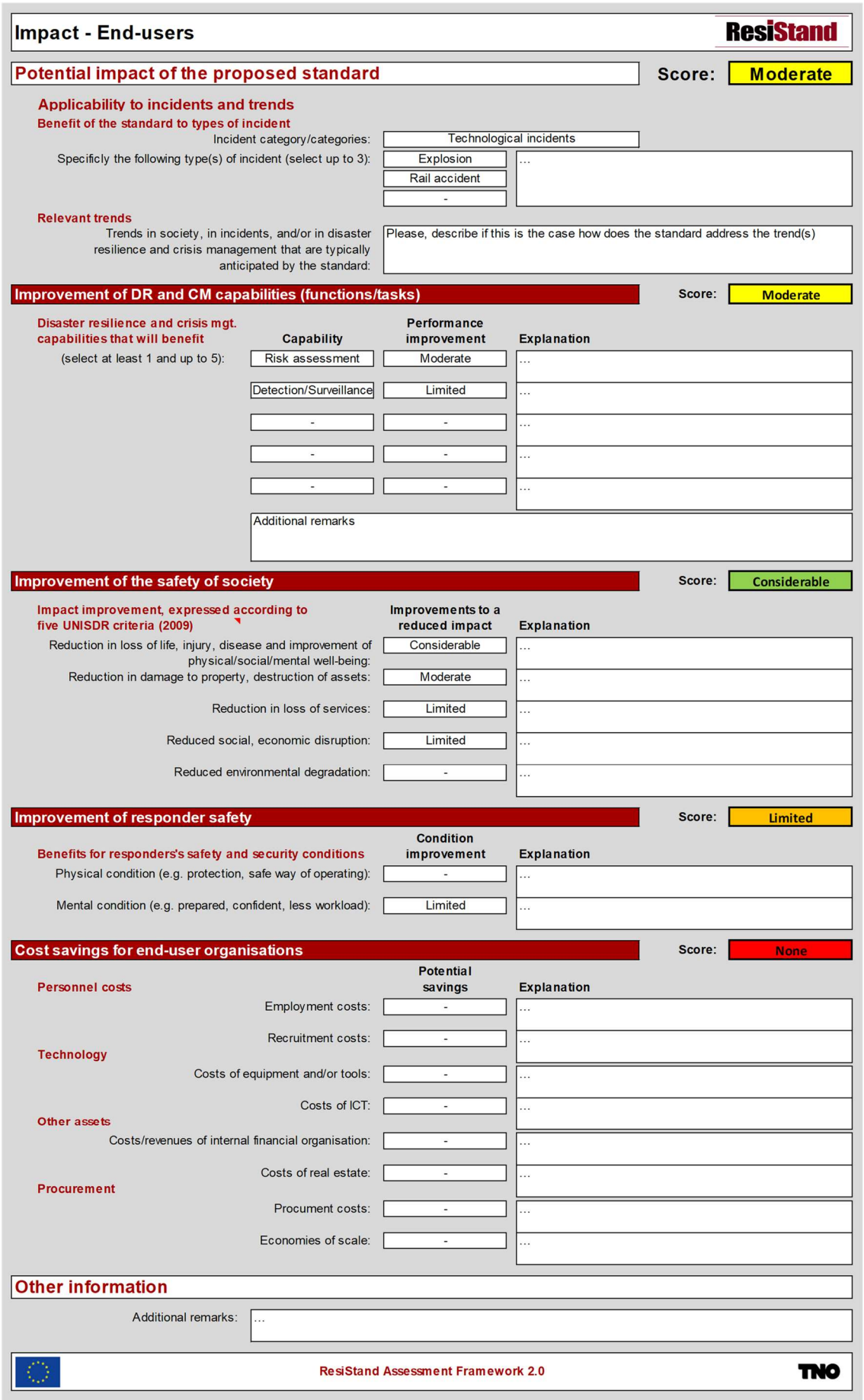
- Physical condition (e.g. protection, safe way of operating)
- Mental condition (e.g. prepared, confident, less workload)

Cost savings for end-user organisations

Like other organisations, practitioners also aim for efficiency, which, due to savings, might indirectly contribute to the additional improvement of disaster resilience and crisis management.[4] To this end, information can be provided by the user on expected cost savings by the standard with respect to:

- Personnel costs (employment, recruitment)
- Technology (equipment, tools, ICT)
- Other assets (real estate, financial organisation)
- Procurement (procurement, economies of scale)

[2] Source: ResiStand deliverable D1.1 – *ResiStand Conceptual Framework*
[3] "UNISDR Terminology on Disaster Risk Reduction"; United Nations; 2009
[4] E.g., issues like economies of scale and improved transparency in supplier relationships and contracting



Impact - End-users

ResiStand

Potential impact of the proposed standard

Score: Moderate

Applicability to incidents and trends

Benefit of the standard to types of incident

Incident category/categories:	Technological incidents	
Specifically the following type(s) of incident (select up to 3):	Explosion	…
	Rail accident	
	-	

Relevant trends

Trends in society, in incidents, and/or in disaster resilience and crisis management that are typically anticipated by the standard:	Please, describe if this is the case how does the standard address the trend(s)

Improvement of DR and CM capabilities (functions/tasks)

Score: Moderate

Disaster resilience and crisis mgt. capabilities that will benefit (select at least 1 and up to 5):	Capability	Performance improvement	Explanation
	Risk assessment	Moderate	…
	Detection/Surveillance	Limited	…
	-	-	…
	-	-	…
	-	-	…

Additional remarks

Improvement of the safety of society

Score: Considerable

Impact improvement, expressed according to five UNISDR criteria (2009)	Improvements to a reduced impact	Explanation
Reduction in loss of life, injury, disease and improvement of physical/social/mental well-being:	Considerable	…
Reduction in damage to property, destruction of assets:	Moderate	…
Reduction in loss of services:	Limited	…
Reduced social, economic disruption:	Limited	…
Reduced environmental degradation:	-	…

Improvement of responder safety

Score: Limited

Benefits for responders's safety and security conditions	Condition improvement	Explanation
Physical condition (e.g. protection, safe way of operating):	-	…
Mental condition (e.g. prepared, confident, less workload):	Limited	…

Cost savings for end-user organisations

Score: None

	Potential savings	Explanation
Personnel costs		
Employment costs:	-	…
Recruitment costs:	-	…
Technology		
Costs of equipment and/or tools:	-	…
Costs of ICT:	-	…
Other assets		
Costs/revenues of internal financial organisation:	-	…
Costs of real estate:	-	…
Procurement		
Procument costs:	-	…
Economies of scale:	-	…

Other information

Additional remarks: …

ResiStand Assessment Framework 2.0 TNO

Figure 3: RAF 2.0 – Impact – End-users tab

3.3 *Impact – Industry & Research*

This tab concerns the mapping of potential benefits for industry, including SMEs, and research organisations such as increased business opportunities, improved business quality management, innovation progress, and improved business functions.

On top of this tab the user can indicate for which trends the proposed standard is of interest. He can do so by describing technical and non-technical trends that are of importance to industry and research organisations and that are addressed by the proposed standard; this concerns subjects such as Sensing technology, Command, Control and Communication technology, Surveillance technology (including the use of unmanned vehicles), Protection of the public in general, Simulation technology, Physical protection of objects and subjects, and Crisis logistics[5].

The remainder of this tab consists of four sections each dealing with one theme of interest. Every section contains a checklist of topics of which the user is asked to indicate to which extent they will be improved once the proposed standard has been established. Options are: None, Limited, Moderate, Considerable, and Great. It should be noted that most topics are adopted from ISO methodology 2.0[6] (see also deliverable D1.3, paragraph 5.1). In addition the user can explain each of his answers. Furthermore, he is enabled to provide additional information at the bottom of each section.

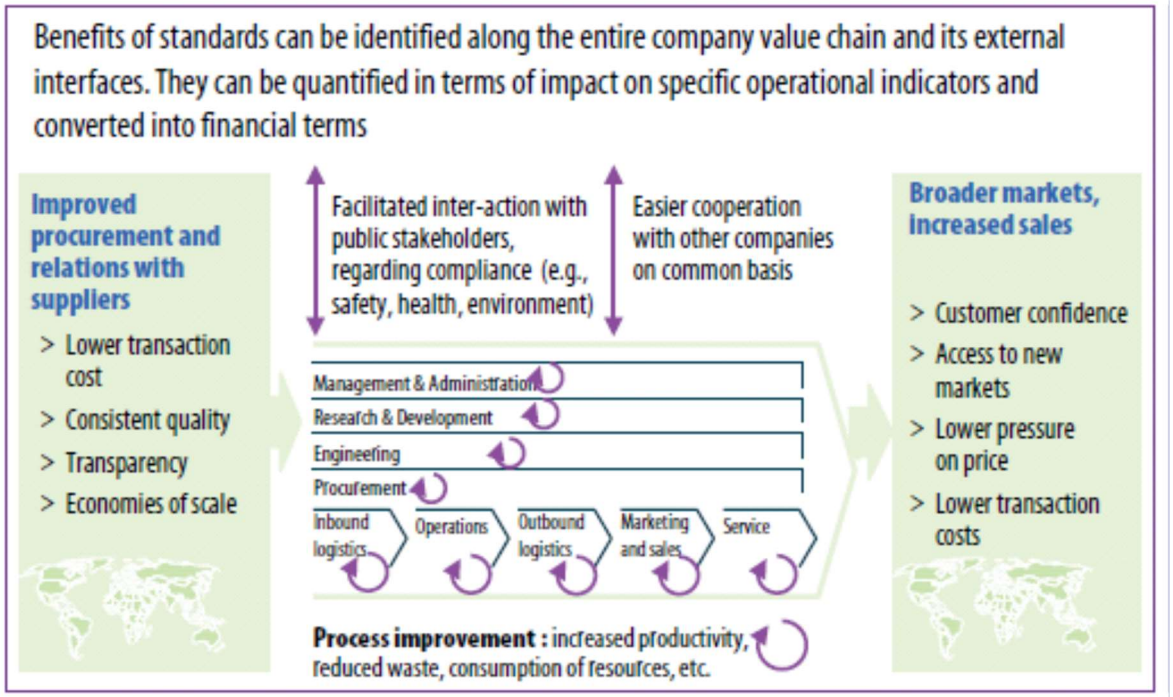


Figure 4: ISO methodology 2.0 at a glance

For each of the four sections the overall score is the maximum value of the provided answers (this because it is not necessary or required that all aspects will improve by the proposed standard). The overall impact score on the top-right of this tab is determined by taking the average value of the four section scores.

[5] The classification of technologies originates from the *ResiStand Handbook* (deliverable D1.1, chapter 4).
[6] "Economic benefits of standards, ISO methodology 2.0" (2013)

Increase of business opportunities

Topics:

- Increasing sales on existing market (increased market share)
- Access to new markets (e.g. geographical or sectoral, dual use or a new product)
- New partnerships (between companies, public-private, etc.)
- Improved profit margin (e.g. economies of scale)
- Cost reduction (as a result of cheaper procurement, production and sales)

Improvement of business quality management

Topics:

- Customer satisfaction, image, and/or reputation
- Consistent quality

Innovation progress

Topics:

- New identified market needs
- Knowledge development and transfer
- Applies scientific knowledge to practice

Improvement of business functions

Topics:

- Inbound logistics (receiving and storing incoming goods or material for use)
- Production / Operations (processing, quality assurance, health, safety and environment)
- Outbound logistics (storing, transporting, and distributing goods to customers)
- Marketing and Sales (e.g. market analysis, marketing, contracting, sales)
- Service (customer care and technical support)
- Management & Administration (general management, finance, control, legal, facility management, IT, HR)
- Engineering / Construction (efficient engineering, design, construction)
- Research & Development (efficient R&D, knowledge management, research, product development)
- Procurement

Impact - Industry & Research

ResiStand

Potential impact of the proposed standard

Score: Limited

Applicability to trends

Relevant trends

Technical and non-technical trends of interest for industry and research that potentially are addressed by the standard:

Please, describe if this is the case how does the standard address the trend(s)

Increase of business opportunities

Score: Limited

	Potential increase	Explanation
Increasing sales on existing market: *(increased market share)*	Limited	…
Access to new markets: *(e.g. geographical or sectoral, dual use, new product)*	Limited	…
New partnerships: *(between companies, public-private, etc.)*	-	…
Improved profit margin: *(e.g. economies of scale)*	-	…
Cost reduction: *(as a result of cheaper procurement, production and sales)*	-	…

Additional remarks

Improvement of business quality management

Score: Limited

	Potential improvement	Explanation
Customer satisfaction/image/reputation:	-	…
Consistent quality:	Limited	…

Additional remarks

Innovation progress

Score: None

	Potential progress	Explanation
New identified market needs:	-	…
Knowledge development and transfer:	-	…
Applies scientific knowledge to practice:	-	…

Additional remarks

Improvement of business functions

Score: Limited

	Performance improvement	Explanation
Inbound logistics: *(receiving and storing incoming goods or material for use)*	-	…
Production / Operations: *(processing, quality assurance, health, safety and environment)*	-	…
Outbound logistics: *(storing, transporting, and distributing goods to customers)*	-	…
Marketing and Sales: *(e.g. market analysis, marketing, contracting, sales)*	-	…
Service: *(customer care and technical support)*	-	…
Management & Administration: *(general mgt., finance, control, legal, facility mgt., IT, HR)*	-	…
Engineering / Construction: *(efficient engineering, design, construction)*	-	…
Research & Development: *(efficient R&D, knowledge mgt., research, product development)*	Limited	…
Procurement: (procurement activities, screening and selection of suppliers, negotiating and contracting)	-	…

Additional remarks: …

Other information

Additional remarks: …

Figure 5: RAF 2.0 – Impact – Industry & Research tab

3.4 Ethical-Societal-Legal issues

The RAF questions on ethical, societal, and legal issues are designed to help standardisation working groups consider how communities and citizens will be affected by the standard. The aim is to ensure that the standard that is developed is of benefit to society and does no harm. The questions in this tab do not assess if the standard is 'ethical' or not, or if the decisions are 'right' or 'wrong'. They are about finding the best answers for both disaster risk management practice, community betterment, and societal resilience as a whole.

Below is guidance to support the user in completing the Ethical-Societal-Legal issues tab. The idea is that one should consider all issues. However, for each standard, different issues will have greater relevance. Questions are included within each section as examples for some of the ways in which these issues could be reflected upon in the development of the standard or assessed as the standard takes shape. The overall score on considering potential ethical, societal and legal effects, on top of this tab, is the average value of all answers.

a) Dignity

Respect for citizens should be maintained and they should be able to live free of physical and mental abuse and exploitation.

- Human and/or community dignity
  It is important that the standard will not diminish respect, fairness, and notions of self-worth among practitioners or citizens being served. Any standard should be able to be applied in ways that respect different community values.
  For example:
    - Did the process of developing the standard manage fairly how various communities of citizens and practitioners define risk?
    - Would a standard around pandemics improve procedures to look after the dying in a way that dignifies different cultural rites?
    - Would a standard around CBRN decontamination result in situations of indignity for people of particular religions?
- Awareness among practitioners of fairness practices in risk management
  The standard should ideally build a stronger understanding among practitioners of how to make their actions increasingly fair to increasingly diverse societies. This means that all citizens will share the benefits and challenges associated with the standard.
  For example:
    - Does the standard provide tools for practitioners to support the critical thinking necessary to build awareness of how their implementation of the standard affects others?
    - Can the implementation of a standard skew benefits towards one community over another?
    - Would a standard related to crisis communication ensure two-way communication (via, for example, social media) is being not only listened to but that there is capacity to address concerns if a listening channel is produced?

b) Avoidance of Harm

No harm should come to citizens as a result of the standard

- The public's perception of the issues addressed by the standard have been considered
  To have the standard best serve the public and help build trust in disaster services, there should be consideration of how the standard will be received and understood by the public.
  For example:
    - Will the standard enable first responders to carry out more reliable, safe and successful missions because of increased understanding of the local public of the issues addressed?

- Did the standard take into account public understanding of the issue or could there be a miscommunication of the standards role/effects that leads to harm? (e.g. would a new standard flood wall height mean homeowners nearby might stop storing sandbags because they think the wall will take care of them?)

c) Non-Discrimination

Citizens should not face discrimination for any reason, including (but not limited to) their age, sex, race, national origin, physical or mental disability, medical condition, pregnancy, marital status, or sexual orientation

- Encouraging inclusion and avoiding exclusion of any groups
  The standard should be representative, unbiased, and non-discriminatory
  For example:
  - Could a standard for risk assessment procedures unintentionally result in racial or community profiling?
  - Does the standard for improved detection methods provide assessment tools to ensure its application is not biased towards a race?
  - Does a standard relating to information exchange encourage collection from sources representative of the communities being served?
- Easy accessibility to all relevant stakeholders to necessary training to develop or implement the standard
  Any standard should ensure that a specific level of expertise (e.g. technological knowledge or physical capability) is not required in order to develop or implement the standard, automatically excluding/discriminating against those without.
  For example:
  - Are accreditation standards accessible and manageable by all relevant stakeholders.
  - Do they put undue costs or require resources beyond the means of some of the stakeholders?

d) Privacy

There are different types of privacy that can be considered (e.g., privacy of the person, privacy of communication, privacy of data and image, privacy of thoughts and feelings). Which meaning is addressed needs to be clear. Privacy also has legal components, taking into account regulations like the EU General Data Protection Regulation.

- Addressing privacy of the parties affected by the standard
  Privacy considerations can be addressed in the research needed to develop the standard or in the implementation and impact of the standard. Considering privacy issues is particularly relevant in the development of technological standards, surveillance standards, or data sharing standards (e.g., on drones, body scanners, unmanned aircraft systems) where privacy can be infringed.
  For example:
  - Will the standard take appropriate data management practices that address the GDPR and privacy needs of the data subjects?
  - If the standard includes authentication done via biometrics, does the standard provide detailed advice on what kinds or privacy issues might arise and thus needs to be addressed in the implementation of the standard?

e) Duty to provide care

The development of a standard should not impact negatively on the ability to provide all individuals with security, physical safety, access to food and clean water, hygiene, temporary housing, clothing, and, if necessary, emergency medical and psychological care in the event of a disaster.

- Increasing ability to communicate risks/harms to those with the power to address them
  Standards focusing on communication and sharing of information during a disaster may increase the ability to provide care during a disaster. Additionally, standards focusing on

utility networks or psycho-social support may also increase the ability to provide care.
For example:

- Will the standard around sheltering support the housing, food, and pastoral care needs of all diverse victims of a given disaster?
- Does a standard around shelter resilience provide tools to support practitioners in assessing whether all communities have equal sheltering provisions?
- Did the development of standards for psycho-social procedures for victim support consider how the standard might be applied in a diversity of communities (e.g. religion, ethnic, economic, rural, urban)?

f) Accountability

Maintaining openness and transparency in decision-making, operational activities, and data processing. Any user of the standard should be able to access records of the decision-making and research that supported its development and implementation. This is a major step is demonstrating social responsibility as well as organisational credibility with the public.

- Supporting progress overall in society with a vision towards future generations
  Any standard should have a positive impact on sustainable development and meet the needs of today without affecting the ability of future generations to meet their needs.
  For example:
  - Does the standard help organisations and agencies understand their social responsibility and integrate the responsibility to do so throughout their organisation?
  - Is this understanding of responsibility communicated internally and to the public?
  - Does the standard encourage progress reviews in order to improve performance and evaluate voluntary initiatives?
- Conducting ethical, privacy, and data protection impact assessments
  It is possible to help mitigate negative effects AND find potential beneficial opportunities with impact assessments that reflexively consider how the standard can be put into practice building on stakeholder experience.
  For example:
  - Has a standard around surveillance conducted the GDPR required Privacy Impact Assessment?
  - For a standard around data protection, is it possible for a data subject to obtain documentation about how their data was processed?
- Plans and/or policies for reporting and managing the possibility of misuse, malfunction, or unintended consequences – are there mechanisms in place for mitigating risk and the unintended consequences of the research and the implementation of the standard?
  For example:
  - Does the standard provide tools for demonstrating compliance?
  - Do after action reporting standards encourage this?
- Clear and verifiable, and publicly accessible statements about the measures taken to mitigate risk during the development of the standard – do measures exist to support accountability?
  For example:
  - If you are using biometrics, is it well documented and publicly retrievable how the biometrics are being processed (stored, analysed, categorised, etc)?

g) Autonomy

Individuals should have the freedom and right to make their own informed decisions and choices without being coerced.

- Supports a person's or institution's ability to make informed decisions
  All actors engaging with a standard should have the ability to determine an action themselves. In other words, any standard should not impose one's will upon another in a

way that takes away their rights.
For example:
    - Does a standard around interoperability creep or force one groups operating procedures or risks assessment criteria onto another?
    - Does the standard necessitate that a local practice is replaced by an external expert system?
    - Does moving what used to be done by experts into 'the hands' of algorithms affect the experts' autonomy?
- Enables a practitioner's or agency's freedom of movement, association, or behaviour
All actors applying a standard can engage with the organisations they believe are necessary to do their job without fear of ramifications or other concerns for their safety or rights.
For example:
    - Does a standard infringe upon a practitioner's or community member's ability to speak up or make their own decisions?
    - Does a standard intended to support resilience consider how local communities or agencies want to have a say in their 'new normal'?

h) Solidarity

Solidarity is concerned with 'being in it together', working together and not only taking responsibility for yourself, but for others as well.

- Respect of human rights and civil liberties of individuals and groups
Any standard should not be able to be interpreted in ways that impede/infringe upon individual freedoms
For example:
    - Do standards for border interfaces consider the rights and freedoms of workers and citizens on each side of the line?
- Support work towards equal opportunity for all citizens in daily life
Standards for disaster risk management should increase social justice, equality, and benefit sharing, even if that is not the primary goal.
For example:
    - Does the standard consider how data is usable for the range of stakeholders and their technological resources?
    - Does the standard for policy approaches to coastal resilience consider how increased support for the coast might decrease support for other places?
    - Do standards for vulnerability analysis provide tools for practitioners to address the range of assets considered critical to community resilience in different locations?
- Promote well-being of individuals or groups
This should include health, cultural heritage, safety, security, clean environment, solidarity.
For example:
    - How does the standard take into account the well-being of different groups when modelling and managing cascading events?
- Increase trust between different practitioners, and between practitioners and the public
The standard should foster solidarity at a range of scales.
For example:
    - Does the standard make it more possible to share lessons learned without fear of repercussion?
    - Do terminologies and vocabularies used in or created by the standard reflect the stakeholders who will be using the standard?
    - Does the standard encourage the necessary considerations to make sure no groups are excluded?

Ethical, Societal and Legal issues

ResiStand

Consideration of potential effects of the proposed standard

Score: Considerably

Theme (a-h)

	Measure of consideration	Explication of the potential effects
a) Dignity		
Human and/or community dignity	Limited	…
Awareness among practitioners of fairness practice in risk management	Completely	…
b) Avoidance of harm		
The public's perception of the issues addressed by the standard	Completely	…
c) Non-discrimination		
Encouraging inclusion and avoiding exclusion of any groups	Completely	…
Easy accessibility for all relevant stakeholders to necessary training to develop or implement the standard	Completely	…
d) Privacy		
Addressing privacy of the parties affected by the standard	Completely	…
e) Duty to provide care		
Increasing ability to communicate risks/harms to those with the power to address them	Unknown	…
f) Accountability		
Supporting progress overall in society with a vision towards future generations	Unknown	…
Conducting ethical, privacy, and data protection impact assessments	Unknown	…
Plans and/or policies for reporting and managing the possibility of mis-use, malfunction, or unintended consequences	Unknown	…
Clear and verifiable, and publically accessible statements about the measures taken to mitigate risk during the development of the standard	Unknown	…
g) Autonomy		
Supporting a person's or institution's ability to make informed decisions	Unknown	…
Enabling a practioner's or agency's freedom of movement, association, or behaviour	Limited	…
h) Solidarity		
Respect of human rights and civil liberties of individuals and groups	Unknown	…
Supporting work towards equal opportunity for all citizens in daily life	Unknown	…
Promoting well-being of individuals or groups	Unknown	…
Increasing trust between different practitioners, and between practioners and the public	Unknown	…

Other information

Additional remarks: …

ResiStand Assessment Framework 2.0

TNO

Figure 6: RAF 2.0 – Ethical-Societal-Legal issues tab

3.5 Feasibility

The feasibility of a successful development and implementation of the standard depends on several determining factors. These concern the following themes: the foundation or start-up conditions, the development and the implementation perspectives and the way in which potential drawbacks and constraints are tackled. This tab consists of four sections each dealing with one of these themes. Every section contains a checklist of topics. The user can indicate to which extent the requested topic is the case. Apart from 'Unknown' the options are: Not at all, Insufficient, Moderate, Sufficient, and Amply sufficient; the last question also has the option 'Not necessary' (three topics also have the option 'Not necessary'). In addition the user can provide an explication of his/her answers.

For each of the four sections the overall score is the minimum value of the provided answers. So, the score is determined by the weakest link in that section (*'each item should properly be fulfilled'*). The overall feasibility score on the top-right of this tab is determined by taking the average value of the four section scores.

Foundation

The aim and the scope of the proposed standard should be clear to all involved stakeholders. There should be consensus by both practitioners and industry/research on what should be achieved. In addition, essential support is required. To determine the foundation, the following checklist is used:

- Expected support by standardisation member bodies
- Clear scope of the standard among all stakeholders
- Consensus among stakeholders what should be achieved
- Responding to clearly expressed need in disaster resilience
- Awareness among all stakeholders about benefits
- Governmental / Top level commitment

Development perspectives

Based on recommendations from current experiences, for being successful in developing standards it is important to meet a number of conditions (see also deliverable D1.3, paragraph **Error! Reference source not found.**). To investigate to which extent these have been met, the following checklist is used:

- Foreseen duration in line with the type of standard
- Clear work plan and time-frame for the content-related development of the standard
- Available funding for development of the standard
- Availability of a critical mass of experts within the development team
- Properly balanced development team
- Background support by relevant practitioners
- Background support by relevant industry and research organisations

Implementation / follow-up perspectives

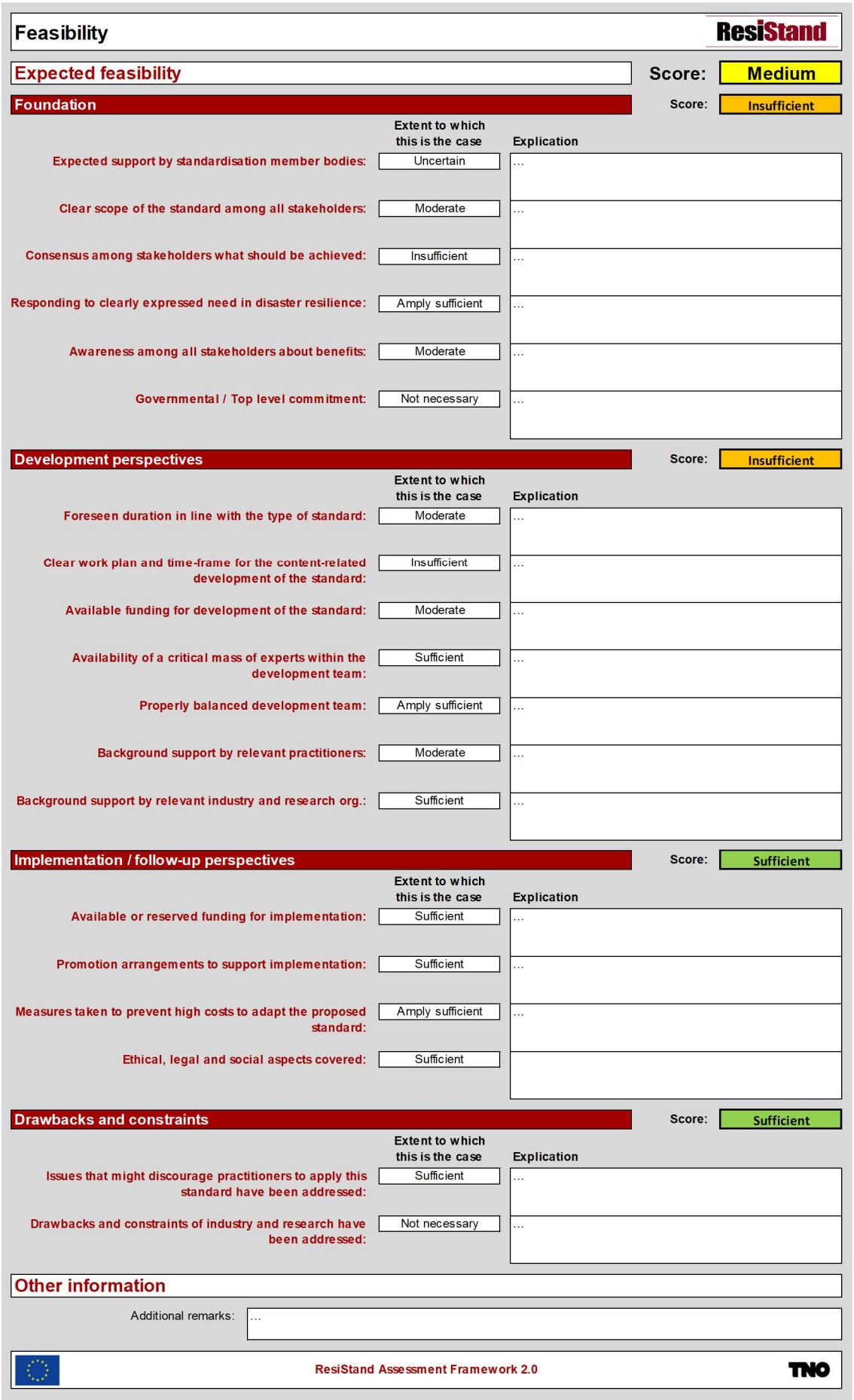
The uptake perspectives, once the standard has been developed, should be as clear as possible (see also deliverable D1.3, paragraph **Error! Reference source not found.**). The following checklist is used:

- Available or reserved funding for implementation
- Promotion arrangements to support implementation
- Measures taken to prevent high costs to adapt the proposed standard
- Ethical, legal and social aspects covered

Drawbacks and constraints

In the Intake tab the user can provide information on barriers and constraints. In this section of the Feasibility tab the user should indicate to which extent these drawbacks have been addressed. It considers two topics related to the end-users (demand side) and the industry/research (supply side):

- Issues that might discourage practitioners to apply this standard have been addressed
- Drawbacks and constraints of industry and research have been addressed



Feasibility

ResiStand

Expected feasibility — Score: Medium

Foundation — Score: Insufficient

	Extent to which this is the case	Explication
Expected support by standardisation member bodies:	Uncertain	…
Clear scope of the standard among all stakeholders:	Moderate	…
Consensus among stakeholders what should be achieved:	Insufficient	…
Responding to clearly expressed need in disaster resilience:	Amply sufficient	…
Awareness among all stakeholders about benefits:	Moderate	…
Governmental / Top level commitment:	Not necessary	…

Development perspectives — Score: Insufficient

	Extent to which this is the case	Explication
Foreseen duration in line with the type of standard:	Moderate	…
Clear work plan and time-frame for the content-related development of the standard:	Insufficient	…
Available funding for development of the standard:	Moderate	…
Availability of a critical mass of experts within the development team:	Sufficient	…
Properly balanced development team:	Amply sufficient	…
Background support by relevant practitioners:	Moderate	…
Background support by relevant industry and research org.:	Sufficient	…

Implementation / follow-up perspectives — Score: Sufficient

	Extent to which this is the case	Explication
Available or reserved funding for implementation:	Sufficient	…
Promotion arrangements to support implementation:	Sufficient	…
Measures taken to prevent high costs to adapt the proposed standard:	Amply sufficient	…
Ethical, legal and social aspects covered:	Sufficient	

Drawbacks and constraints — Score: Sufficient

	Extent to which this is the case	Explication
Issues that might discourage practitioners to apply this standard have been addressed:	Sufficient	…
Drawbacks and constraints of industry and research have been addressed:	Not necessary	…

Other information

Additional remarks: …

ResiStand Assessment Framework 2.0

TNO

Figure 7: RAF 2.0 – Feasibility tab

3.6 Assessment

This (output) tab provides an overall summary of the proposed standard based on input that has been provided by the user in the other (input) tabs.

The upper half of the Assessment tab presents:

- Title and identification number of the proposed standard, as well as information about the proposing (types of) organisations, the scope and the type of standard; this information is found in the Intake tab
- Urgency score, which is also based on input from the intake
- Overall impact score that is determined by taking the average of the impact scores for the end-users and the impact for industry and research (these scores can be found on the top-right of the Impact – End-User and the Impact – Industry & Research tabs)
- Feasibility score for a successful development and implementation of the proposed standard
- Picture showing the feasibility, impact and urgency scores

The lower half of the Assessment tab consists of the following three sections with some additional background information:

- Impact section showing the main results from the Impact – End-User and the Impact – Industry & Research tabs on the potential impact of the proposed standard
- Feasibility section showing the main results from the Feasibility tab
- Other issues section with information on
    - Ethical, social and/or legal effects of the standard that is found in the Ethical-Societal-Legal issues tab
    - Types of disasters for which the standard is of interest (from the Impact – End-User tab)
    - All kinds of trends for which the standard is of interest (from the Impact – End-User and the Impact – Industry & Research tab)

When printed the Assessment tab fits on one A3 page (orientation: portrait).

Assessment

ResiStand

Title of the proposed standard: Shortname that characterises the standard
Identification number: Topic - 001

Proposed standardisation activity and its perspectives

	Organisation or project consortium	Stakeholder category
Proposing organisations or projects:	National police of ...	End-users
	DIN	Industry
	TNO	Research
	H2020 ResiStand	Hybrid
	-	-

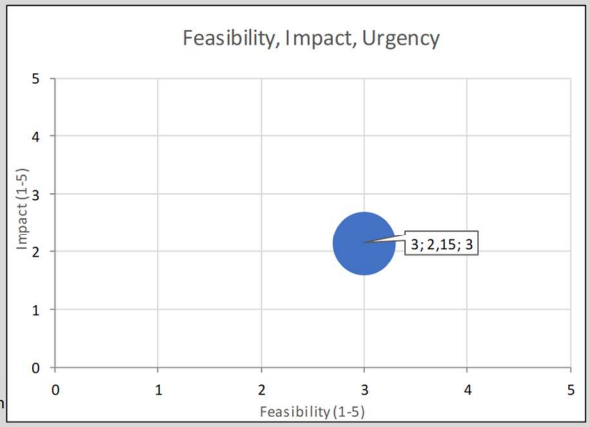
Scope of the standard: This standard defines ...

Type of standard: Workshop Agreement

Urgency (when needed?): Moderate (< 2 yrs)

Overall impact: Moderate

Feasibility: Medium



Legend (scores presented in the rectangle)
1st Feasibility: 1=Very low; 2=Low; 3=Medium; 4=High; 5=Very high
2nd Impact: 1=None; 2=Limited; 3=Moderate; 4=Considerable; 5=Great
3rd Urgency: 1=Very limited;2=Limited;3=Moderate;4=High;5=Very high

Impact

End-users

Improvement of DR and CM capabilities (functions/tasks): Moderate
Improvement of the safety of society: Considerable
Improvement of responder safety: Limited
Cost savings for end-user organisations: None

Industry & Research

Increase of business opportunities: Limited
Improvement of business quality management: Limited
Innovation progress: None
Improvement of business functions: Limited

Feasibility

Foundation: Insufficient
Development perspectives: Amply sufficient
Implementation and follow-up perspectives: Moderate
Anticipated drawbacks and constraints: Insufficient

Other issues

Potential ethical, social and/or legal effects of the proposed standard: Considerably

Benefit of the standard to types of incident: Technological incidents
Specifically for the following incidents: Explosion
Rail accident
-

Relevant trends

Trends in society, in incidents, and/or in disaster resilience and crisis management that are typically anticipated by the standard:	Please, describe if this is the case how does the standard address the trend(s)
Technical and non-technical trends of interest for industry and research that potentially are addressed by the standard:	Please, describe if this is the case how does the standard address the trend(s)

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Figure 8: RAF 2.0 – Assessment tab