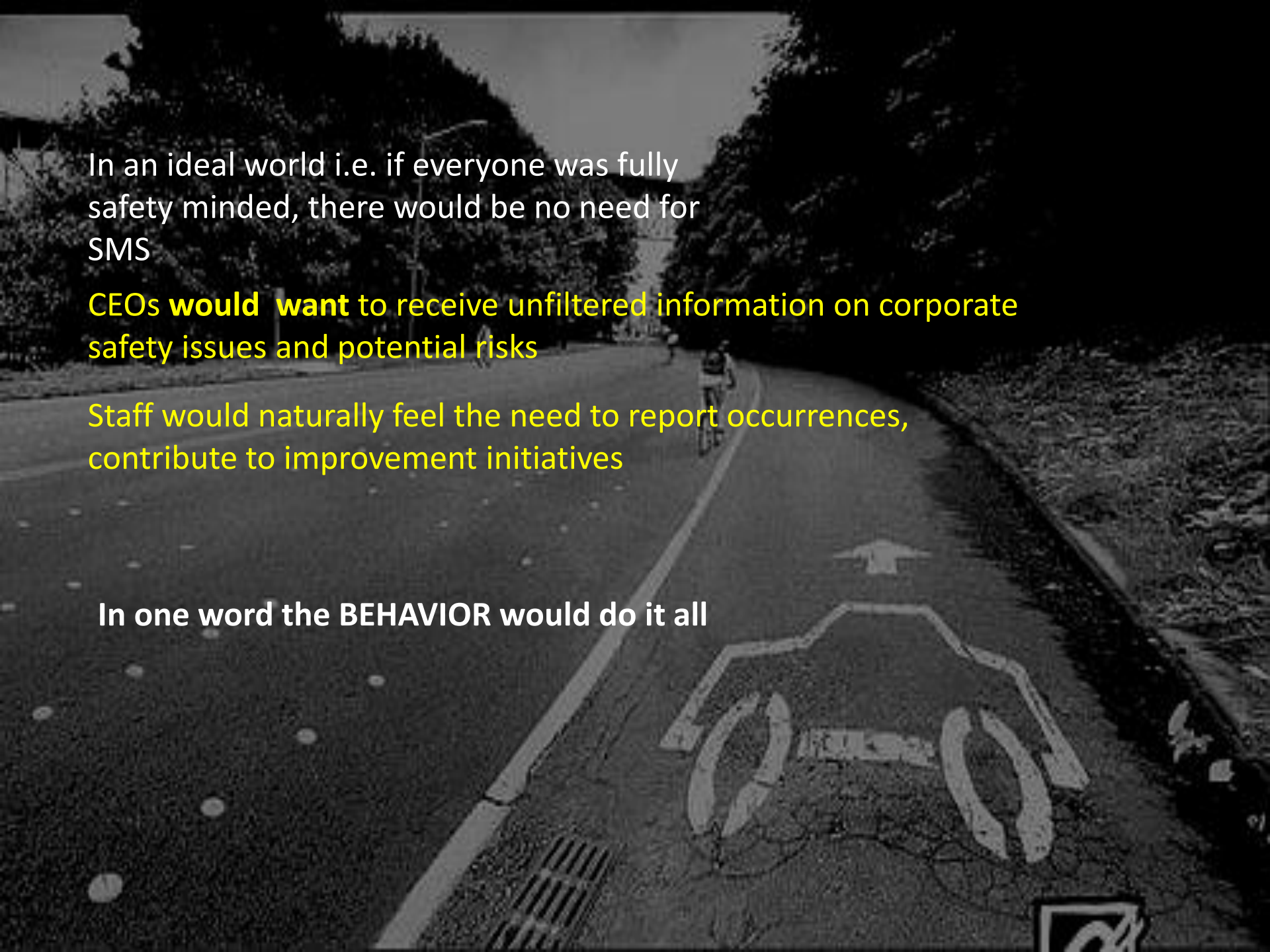
Advanced check:

Where are we wrt "certification"?

Tool and example

Tony LICU-Gilles LE GALO

ESP Programme Manager



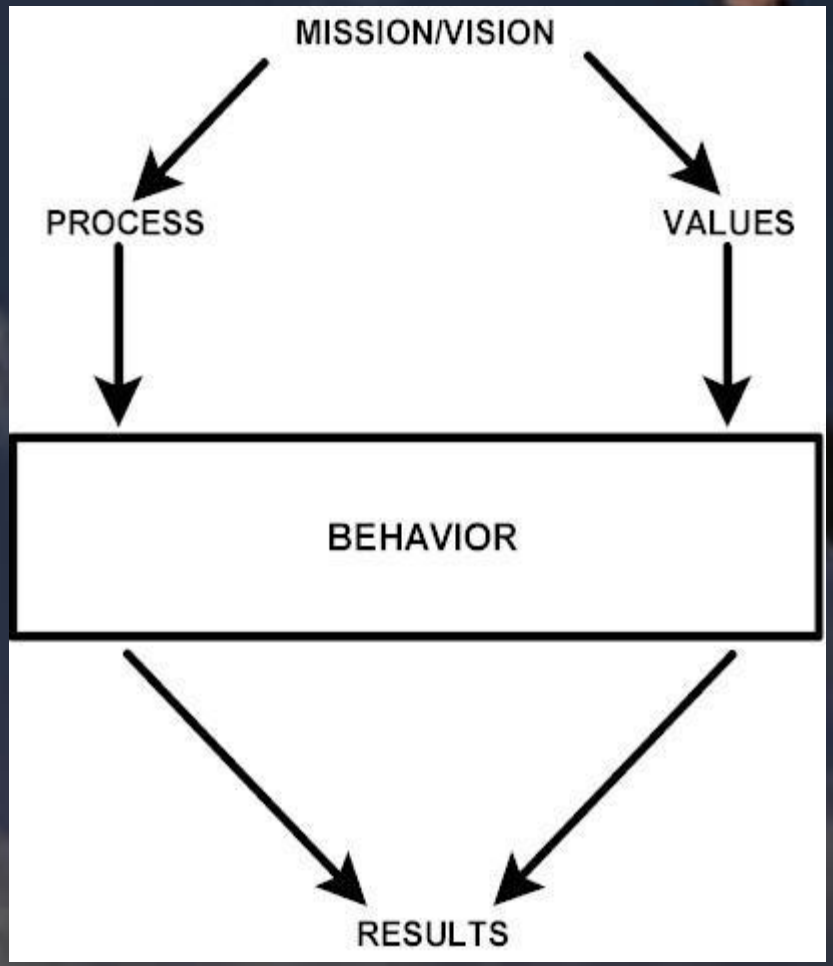
In an ideal world i.e. if everyone was fully safety minded, there would be no need for SMS

CEOs **would want** to receive unfiltered information on corporate safety issues and potential risks

Staff would naturally feel the need to report occurrences, contribute to improvement initiatives

In one word the BEHAVIOR would do it all

This is not the case so SMS must be supported by processes whilst developing its culture, in such a way the behavior is made of "mandatory" activities together with the culture existing at one moment in time in the company




How can these two dimensions
be captured by a survey?
The Transport Canada Approach

Classical approach looking for WHAT is in place would not work

Would asking *"do you have a good safety culture in your mind"* be a question likely to provide correct answers?

Only works for material

So the questions have to be more clever……this is what Transport Canada has done

See an example

Principles of the approach

1. Describe precisely what you would wish to see or hear from auditees: the EXPECTATIONS

Expectations-Table B 1.1 – Safety Policy

Component	1.	Safety Management System Implementation
Element	1.1	Safety Policy

Expectations

- A safety policy is in existence.
- The organisation has based its safety management system on the safety policy.
- The safety policy is appropriate to the size and complexity of the organisation.
- The safety policy states the organisation's intentions, management principles and commitment to continuous improvement in the safety level.
- The safety policy is approved by the accountable executive.
- The safety policy is promoted by the accountable executive.
- The safety policy is reviewed periodically.
- The safety policy includes a commitment to involve personnel at all levels in the establishment of the safety management system.
- The safety policy includes a commitment to involve personnel at all levels in the maintenance of the safety management system.
- The safety policy is communicated to all employees with the intent that they are made aware of their individual safety obligations.
- There is a clear declaration of commitment to safety.
- Senior management has a clear commitment to safety.
- Senior management demonstrates their commitment to safety through active and visible participation in the safety management system.
- The policy is implemented at all levels of the organisation.
- The policy is clearly visible to all personnel and particularly throughout the safety-critical areas of the organisation.
- The policy is included in key documentation and communication media.
- Senior managers clearly articulate the importance of safety when addressing company personnel.
- Verification that personnel have understood the message.
- Senior executives have made a commitment to the development and ongoing improvement of the safety management system.

cultural

cultural

understanding

Principles of the approach

2. Develop questions that look for cultural background and/or understanding: the QUESTIONS

Component	1.	Safety Management Plan
Element	1.1	Safety Policy

Questions

To the accountable executive:

No question to the Safety Manager

How would you summarise your safety philosophy and expectations from your company's safety management system? Are there any particular SMS policy initiatives with which you or your senior management are personally identified (show me)

How do you communicate your SMS performance expectations to the organisation? Are there any specific SMS issues that you expect to have a significant impact on your company's performance?

How often do you critically review the standing SMS policy? Who is involved in this review?

How do you assess the extent to which safety policy and SMS processes are understood within your company? How do you measure your company's SMS performance? How is the information from these performance appraisals used?

How has your safety policy influenced the development of your safety management system? Show me an example.

To functional department heads:

Open ended questions

What expectations does your employer have with respect to you and your department's SMS performance? How are these expectations communicated to you? Can you explain your role in the development of your safety obligations and your department's SMS performance criteria?

How do you communicate SMS processes/obligations to personnel within your department? How do you assess the extent to which safety policy and SMS processes/obligations are understood within your department?

How are employees involved in the maintenance of the SMS?

To employees:

What is your understanding of management's expectations of you with respect to company SMS performance?

How would you characterise management's commitment to strong SMS performance?

How does management make you aware of the relationship between the safety policy and different safety initiatives?

Principles of the approach

3. Use of a scoring system: the RESULTS

Score-Table D 1.1 Safety Policy

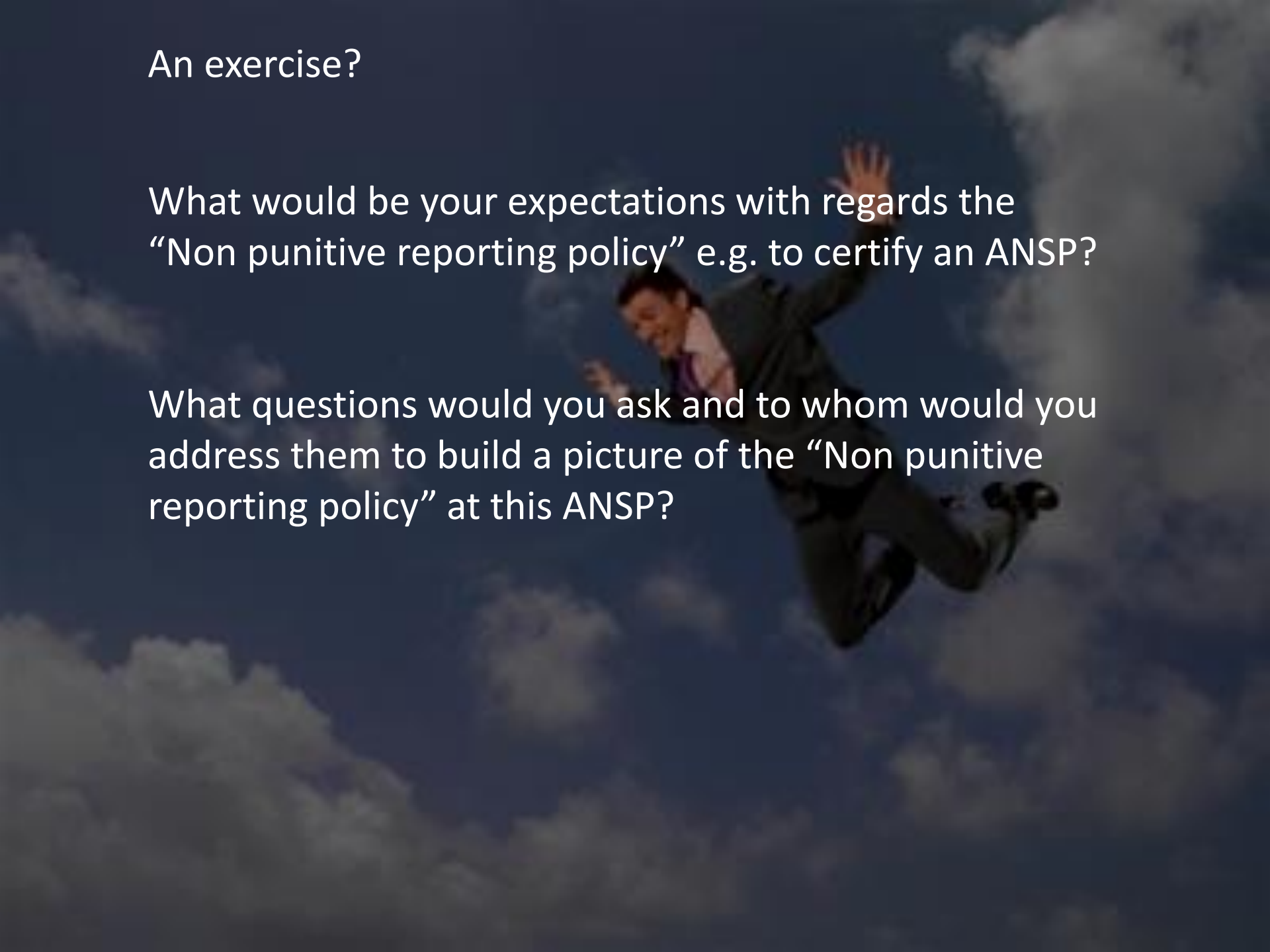
Score	Criteria
1	Senior management does not demonstrate commitment to a SMS. Safety policies are not well developed and most personnel are not involved in SMS.
2	**(3) less some aspects**
3	A.A safety policy is in existence and appropriate to the size and complexity of the organisation. B.The organisation has based its safety management system on the safety policy. C.The safety policy is approved by the accountable executive. D.The safety policy is promoted by the accountable executive. E.The safety policy is reviewed periodically. F.The safety policy is communicated to all employees with the intent that they are made aware of their individual safety obligations.
4	**All of (3) plus some aspects of (5)**
5	All of 3 plus all of the following: There is a clear declaration of commitment to safety. The safety policy states the organisation's intentions, management principles and commitment to continuous improvement in the safety level. Senior management has a clear commitment to safety and demonstrates it through active and visible participation in the safety management system. Personnel at all levels are involved in the establishment and maintenance of the safety management system. The policy is implemented at all levels of the organisation. The policy is clearly visible o all personnel and particularly throughout the safety-critical areas of the organisation. The policy is included in key documentation and communication media. Senior managers clearly articulate the importance of safety when addressing company personnel. Verification that personnel have understood the message. Commitment of the organisation's senior executives to the development and ongoing improvement of the safety management system.

Experience of using the tool

In one organisation surveyed, all hard issues (PROCEDURES-ORGANISATION-JOB DESCRIPTIONS-TRAINING etc…) were perfectly addressed and covered

BUT the other “leg” of the SMS was the weakeness.

The Survey revealed the soft issues: COMMUNICATION & TRUST



An exercise?

What would be your expectations with regards the “Non punitive reporting policy” e.g. to certify an ANSP?

What questions would you ask and to whom would you address them to build a picture of the “Non punitive reporting policy” at this ANSP?

Expectations

Element	1.2 Non-Punitive SMS Safety Reporting Policy

Expectations

- There is a policy in place that provides immunity from disciplinary action for employees that report safety deficiencies, hazards or occurrences.
- Conditions under which punitive disciplinary action would be considered (e.g. illegal activity, negligence or willful misconduct) are clearly defined.
- The policy is widely understood within the organization.
- The organizations have letters of understanding between employees and/or third party contractors and management to document the disciplinary policy, and the manner in which it will be implemented.
- Personnel express confidence and trust in the policy.
- There is concrete evidence that the organization is applying the non-punitive safety reporting policy.

Questions

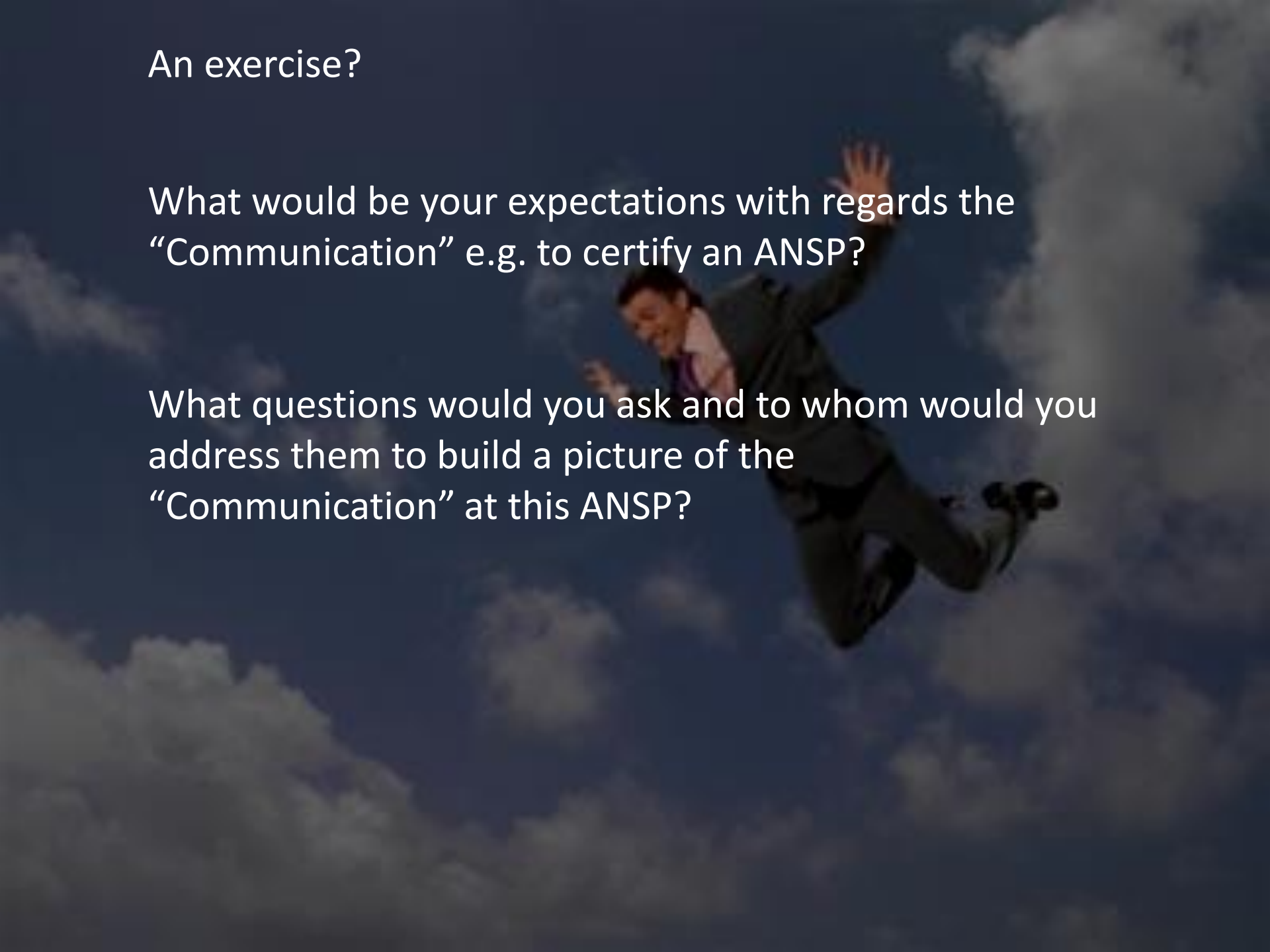
Element	1.2 Non-Punitive Safety Reporting Policy
Questions	
To accountable executive and department heads:	
(A)	Can you describe the disciplinary policy in regards to the SMS reporting system? Is it non punitive?
(BP)	How do you ensure that employees understand the policy?
(BP)	Has the organization established the conditions under which disciplinary action would be considered? (show me) How do you know that this is clearly understood by the personnel?
(BP)	Are there any formalized documents, such as letters of understanding, between employee groups / third party contractors and management?
To employees:	
(A)	Do you feel confident reporting safety deficiencies, hazards and occurrences? Explain

So definitely the questions are not limited to a “Do you have a non punitive reporting policy?” (if yes show me)

Scoring

Table D1.2 – Safety Management Plan – Non-Punitive Safety Reporting Policy

Score	Criteria
1	Safety-related reports or inadvertent errors result in punitive action being taken against individuals.
2	**(3) less some aspects**
3	A. There is a policy in place that provides immunity from disciplinary action for employees that report safety deficiencies, hazards or occurrences.
4	**All of (3) plus some aspects of (5)**
5	All of 3, plus all of the following: Conditions under which punitive disciplinary action would be considered (e.g. illegal activity, negligence or willful misconduct) are clearly defined and documented. The policy is widely understood within the organization. The organizations have letters of understanding between employees and/or third party contractors and management. The purpose of these letters is to document the disciplinary policy, and the manner in which it will be implemented. Personnel express confidence and trust in the policy. There is concrete evidence that the organization is applying the policy.



An exercise?

What would be your expectations with regards the “Communication” e.g. to certify an ANSP?

What questions would you ask and to whom would you address them to build a picture of the “Communication” at this ANSP?

Expectations

Element	1.4 Communication

Expectations

- There are communication processes in place within the organization that permit the safety management system to function effectively.
- Communication processes are commensurate with the size and scope of the organization. (written, meetings, electronic, etc.)
- SMS information is established and maintained in a suitable medium that provides direction in related documents.
- There is a process for the dissemination of safety information throughout the organization.
- There is a means of monitoring the effectiveness of the process for disseminating safety information within the organization.
- Company wide, uncomplicated, reciprocal communications related to safety and quality issues are plainly evident.
- All areas, including out-stations and outsource functions, are included in the communication network of the organization.
- There is an established means of inter-departmental communication to spread information on SMS related matters.
- There exists a formal means of communicating with experts in SMS so that advice can easily and quickly be obtained by personnel. The documentation should indicate where these experts could be located.
- All personnel are informed as to who is their primary contact for aviation safety related matters.
- There is a process for communication strategy that includes electronic communication, frequent meetings, SMS award systems, employee recognition system, SMS bulletins, etc.
- There is a process for sharing safety related information with outside sources that might be impacted by this information.

Questions

Element	1.4 Communication
Questions	
To accountable executive and functional department heads:	
(A)	What communication processes or methods are in place within your organization? Explain how these processes help your SMS to function effectively?
(B)	How often are SMS meetings held? Who attends these meetings? Do you attend any SMS meetings? How often?
(C)	How does information flow relate to the documentation? How are these made available? (Give examples)
(D)	How is safety information shared within the organization? (horizontally and vertically throughout the organization) How do you know these methods/processes are working?
(D)	How is information on SMS related matters shared between departments? How do you ensure there is company wide, uncomplicated communications?
(BP)	What mechanisms are in place that allow reciprocal communications related to safety and quality issues? (horizontally and vertically throughout the organization)
(BP)	How do you know what the results of these meetings are? How are minutes or decision records kept? How are the results of these meetings communicated to personnel?
(BP)	How are all areas, including out-stations and outsource functions included in the communications network?
(BP)	How are personnel informed as to who is their primary contact for aviation safety related matters?
(BP)	How are best practices identified and shared across the organization?
To employees:	
(A)	How do you know SMS activities are going on within your organization? What evidence do you see that shows SMS is or is not working?
(B)	How often are meetings held? Who attends these meetings? Do you attend any SMS meetings? How often?
(C)	If you needed information related to safety issues, procedures or processes, how would you get it?
(C,D)	How is safety information communicated to you? How do you communicate safety information?
(BP)	Has there ever been a safety related or quality matter that you felt should be brought to the attention of management? How did you deal with this? What response did you receive from management?
(BP)	Who is your primary contact for aviation safety related matters? Do you feel comfortable bringing issues to this person? (explain how, why/why not)

Scoring

Table D1.4 – Safety Management Plan – Communication

Score	Criteria
1	The general exchange of information throughout the organization does not permit the system to function effectively. The organizational communication network does not include all personnel, out-stations and outsource functions.
2	**(3) less some aspects**
3	A. There are communication processes in place within the organization that permit the safety management system to function effectively. B. Communication processes (written, meetings, electronic, etc.) are commensurate with the size and scope of the organization. C. Information is established and maintained in a suitable medium that provides direction in related documents. D. There is a process for the dissemination of safety information throughout the organization and a means of monitoring the effectiveness of this process.
4	**All of (3) plus some aspects of (5)**
5	All of 3, plus all of the following: Company wide, uncomplicated, reciprocal communications related to safety and quality issues are plainly evident. All areas, including out-stations and outsource functions, are included in the communication network of the organization. There is an established means of inter-departmental communication to spread information on SMS related matters. There exists a formal means of communicating with experts in SMS so that advice can easily and quickly be obtained by personnel. The documentation should indicate where these experts could be located. All personnel are informed as to who is their primary contact for aviation safety related matters. There is a process for communication strategy that includes electronic communication, frequent meetings, SMS award systems, employee recognition system, SMS bulletins, etc. There is a process for sharing safety related information with outside sources that might be impacted by this information.

Final remarks

There are many detailed questions for the CeO and to a lesser extent Heads of Departments

Because they should lead the SMS

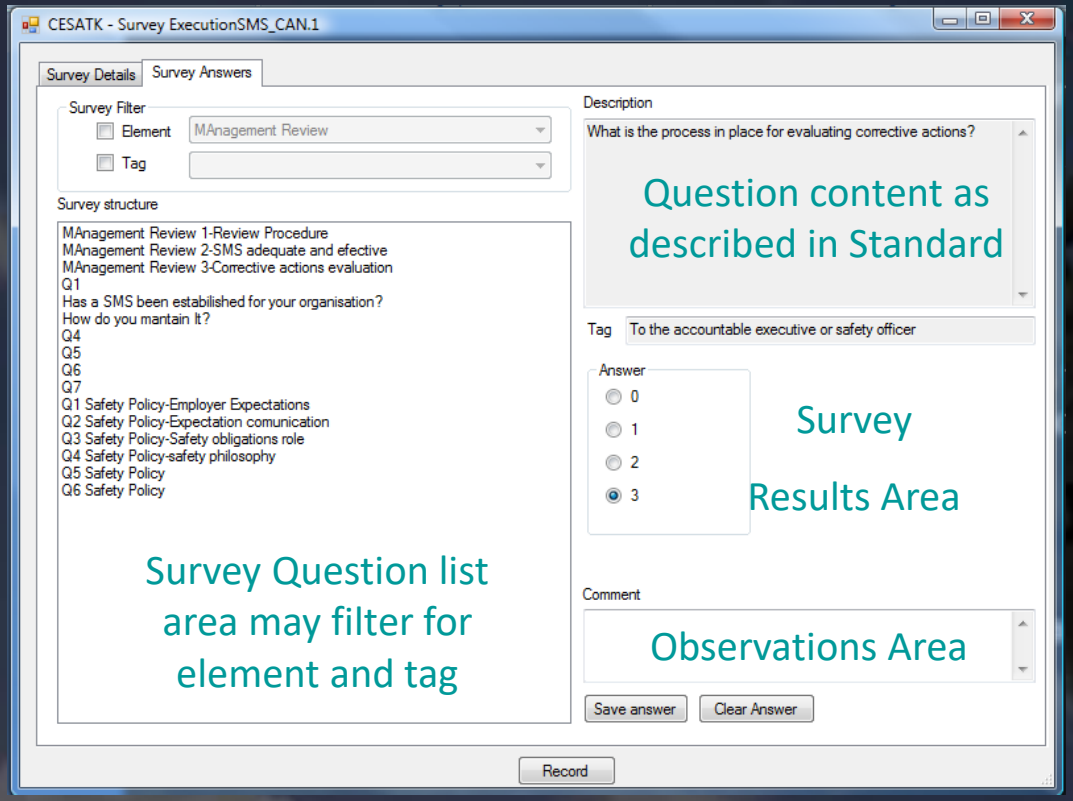
There are virtually no questions for the Safety Manager

Because if he has done his job well then the SMS is in place and understood, so no need to talk to him

There are always few simple “killer” questions for the Staff

Because this the means to verify that the SMS has “spread” all the way across the organisation

1.1- Record the survey observations, results and recommendations



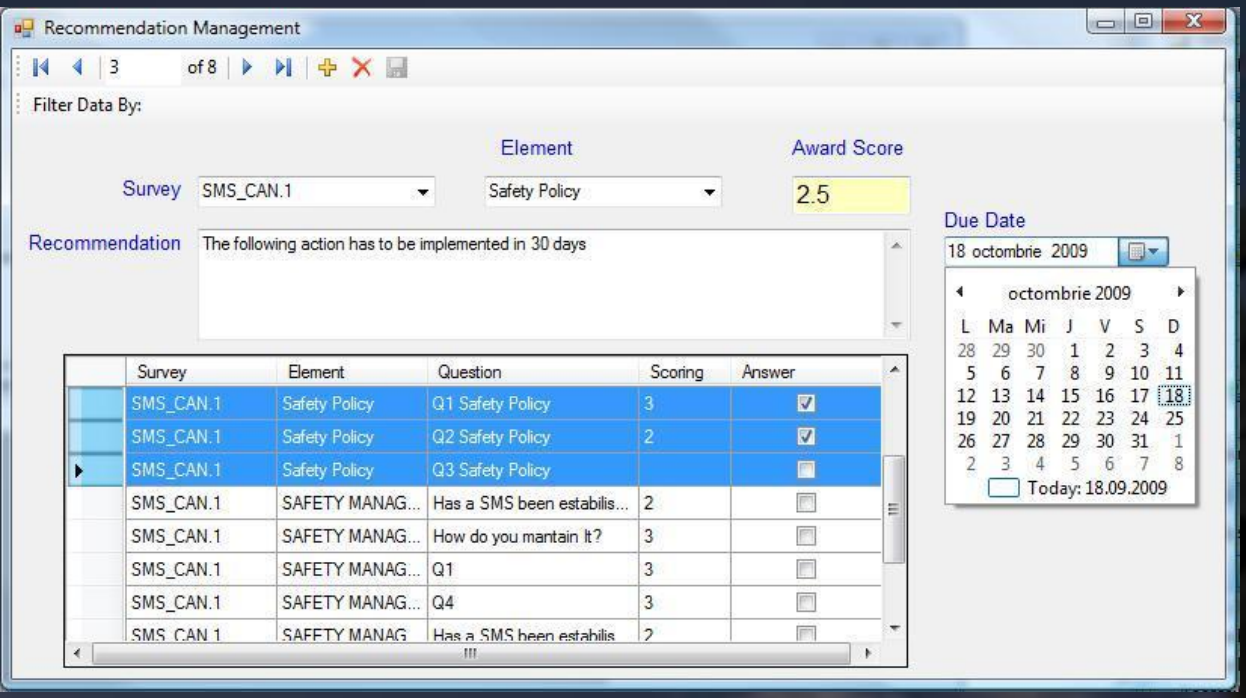
Observations and Results

Recommendations

Results and Observations recorded at the survey time or later at the review time for each question

Survey results automatically mapped between sessions

1.2- Record the survey observations, results and recommendations



Observations and

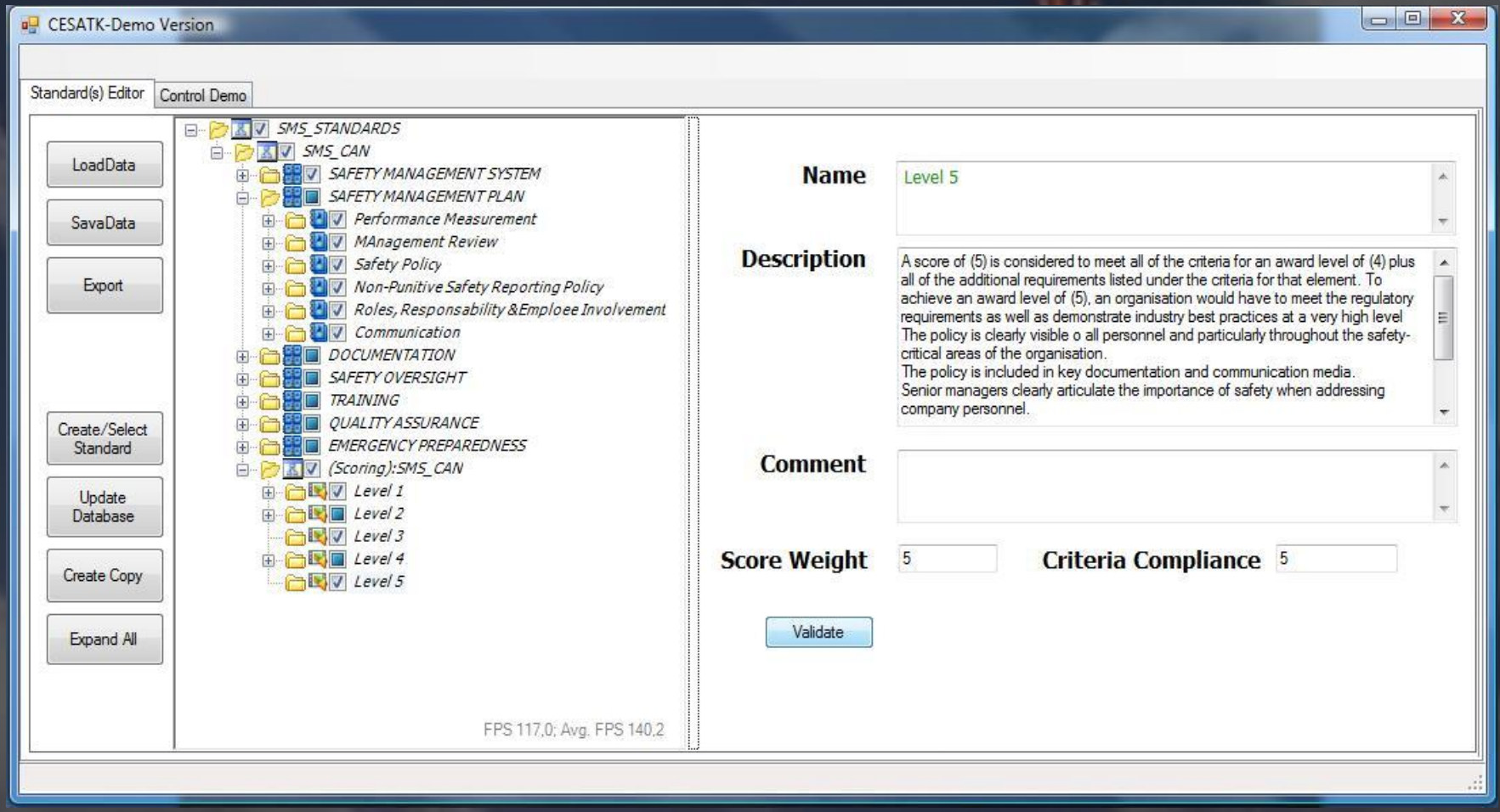
Results

Recommendations

Recommendations recorded later at the evaluation for each Element in a distinct module

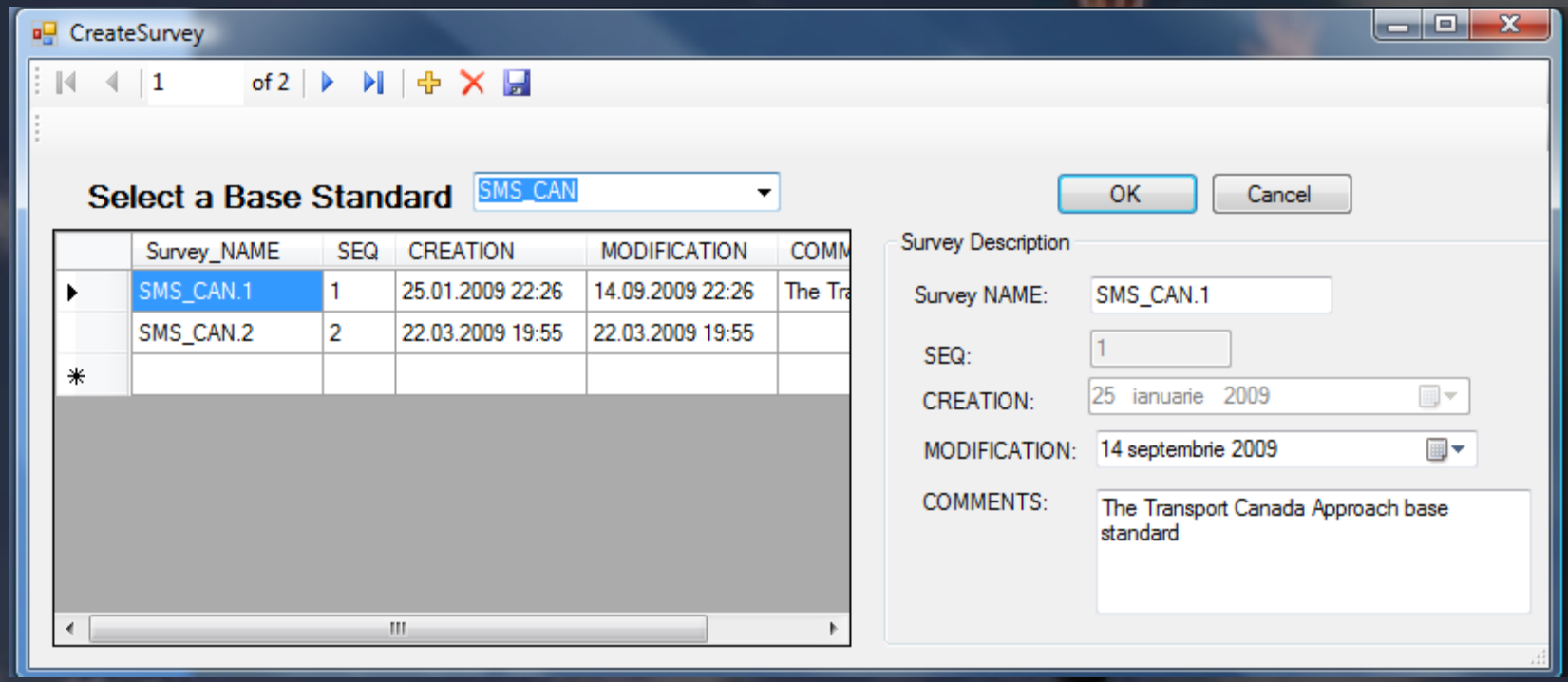
Survey questions, results and observations also included to provide consistency with scoring (Award score assignment) and follow-up actions

2.1 Surveyors trained to use the same approach in a consistent manner



Standard Definition: Tree map organisation of Components, Elements, Questions, Criteria, Scoring in a graphical manner

2.2 Surveyors trained to use the same approach in a consistent manner

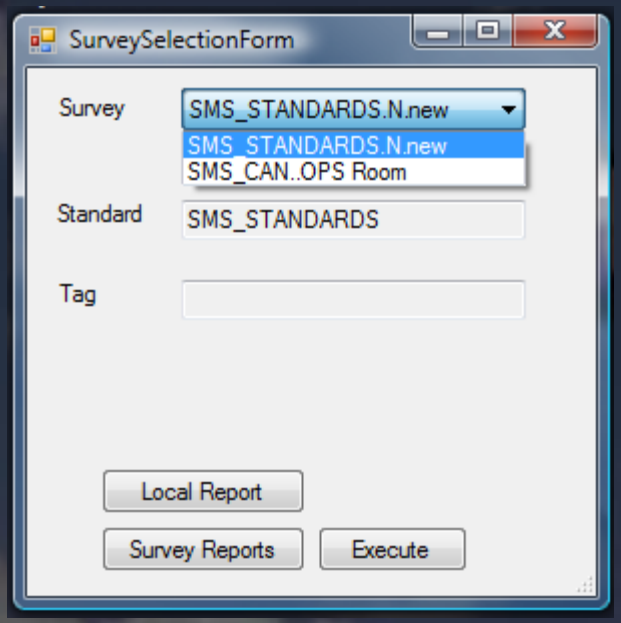


Selection of a base standard to create a Survey Definition.

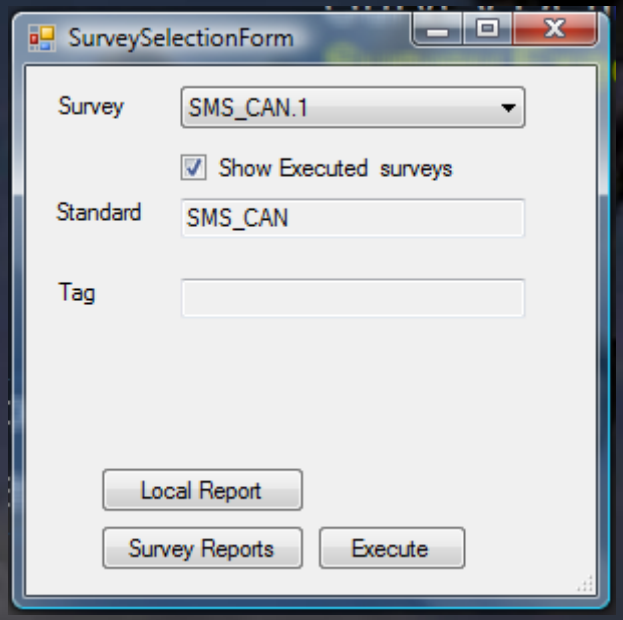
All attributes of the standard are inherited to enable a consistent approach to survey execution

2.3 Surveyors trained to use the same approach in a consistent manner

Standard definition
Survey Definition
Survey Execution Selection

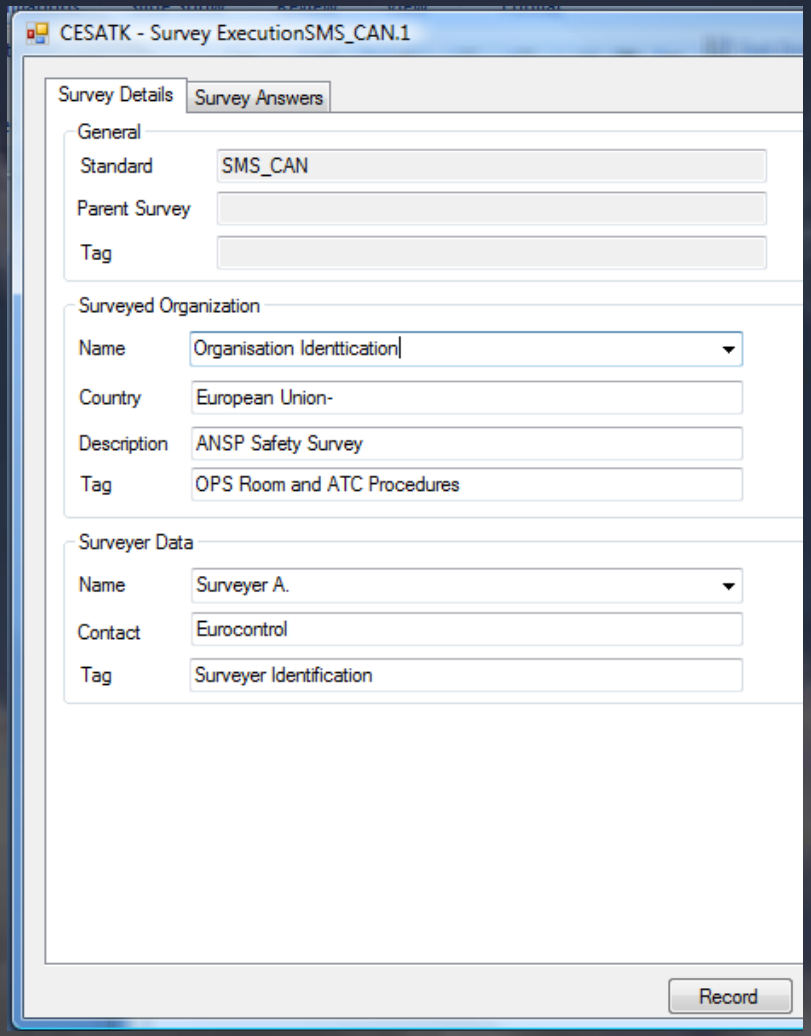


Select Prepared not executed surveys



Review executed surveys

2.4 Surveyors trained to use the same approach in a consistent manner

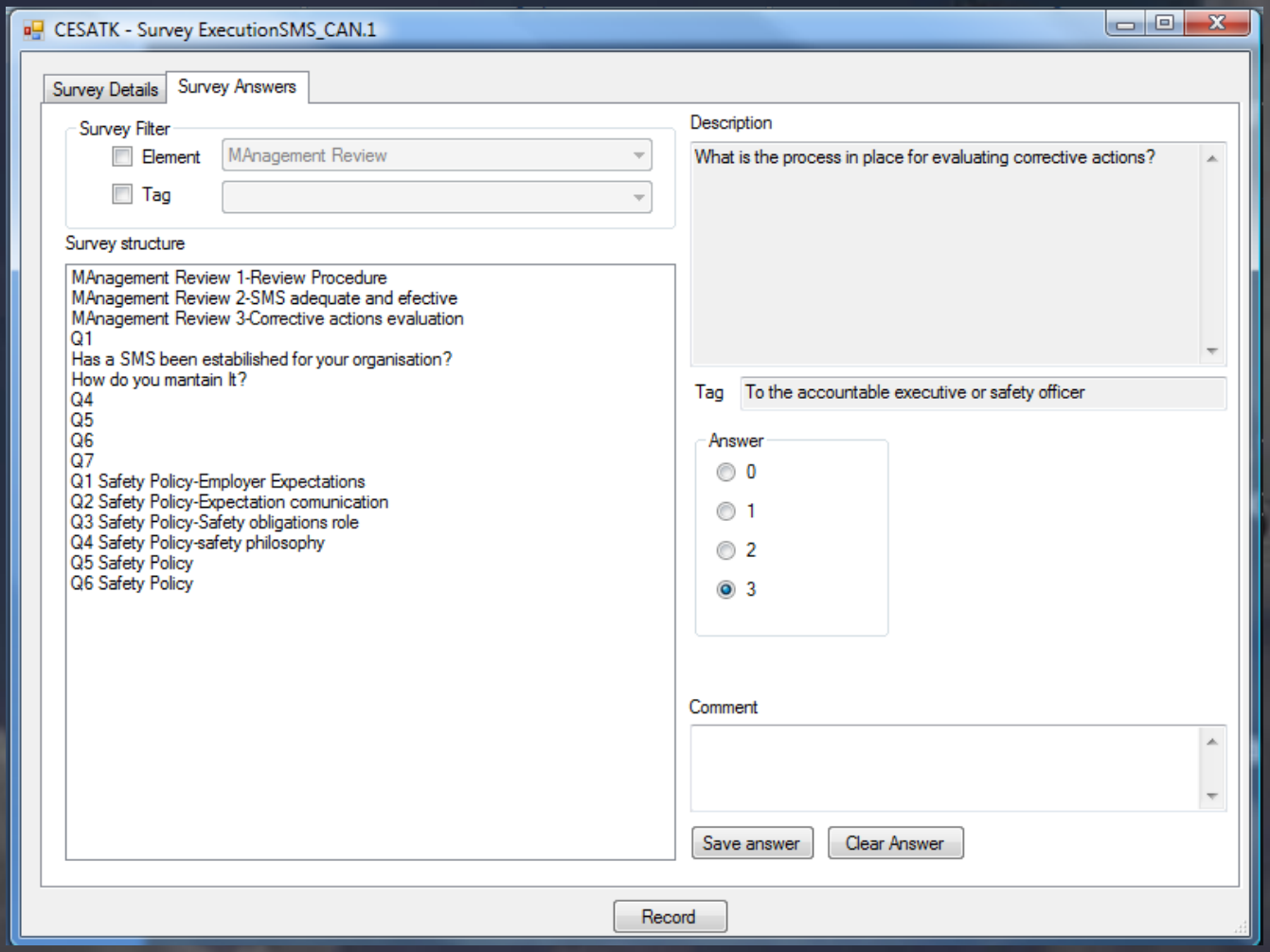


Standard definition
Survey Definition
Survey Execution Selection

Additional data sections to be added for survey identification:
- General Data
- Target Organisation
- Surveyor identification

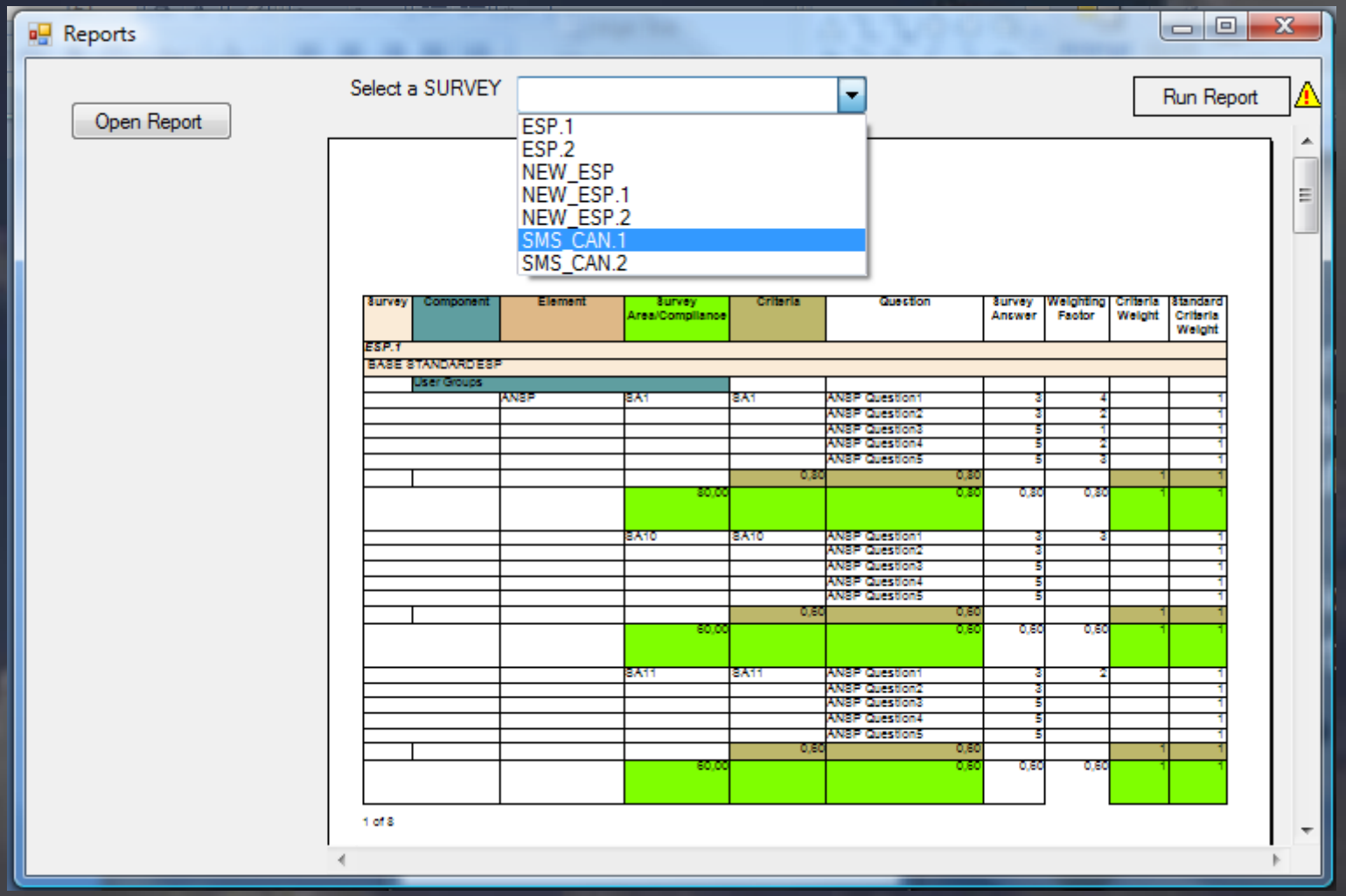
Multiple attributes for each section, database self recording

2.5 Surveyors trained to use the same approach in a consistent manner



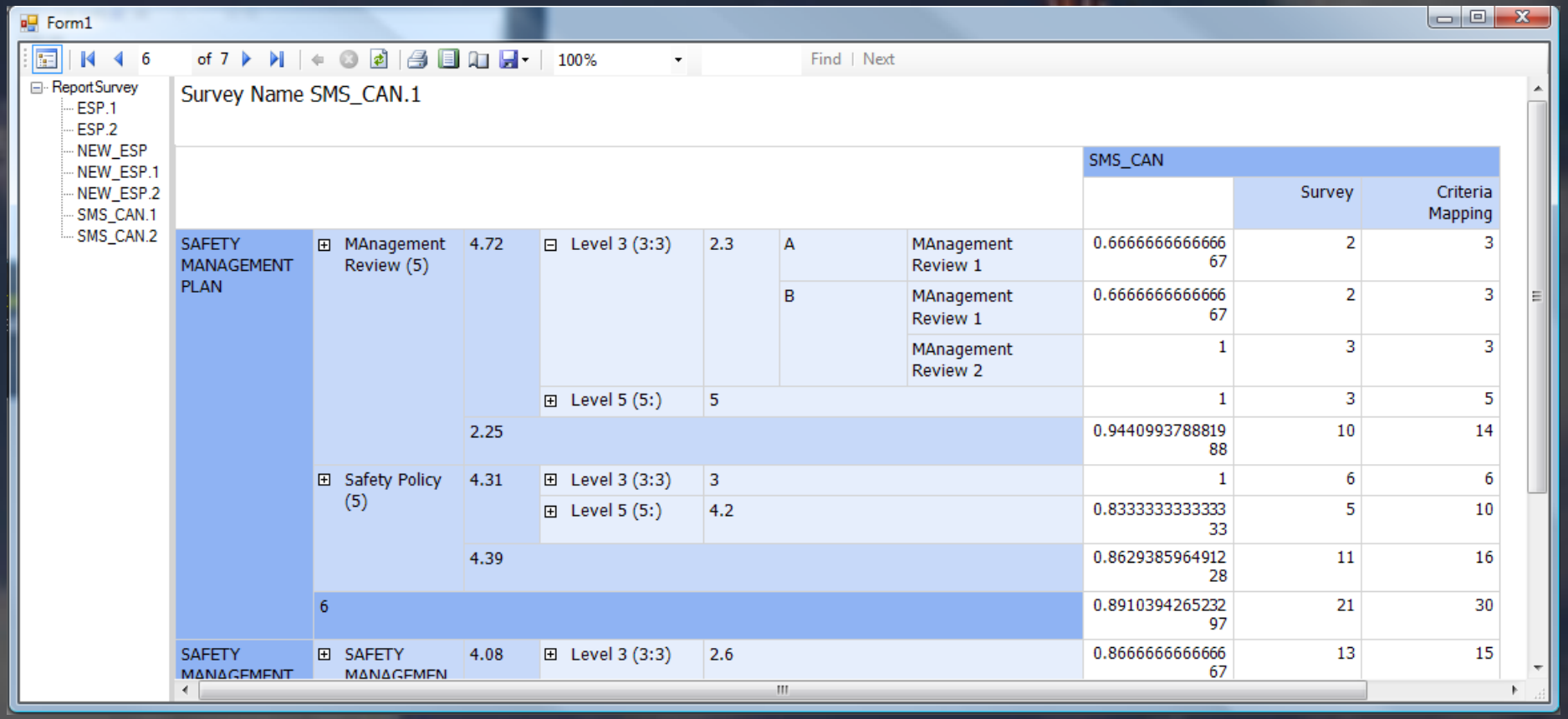
Survey Execution: Survey questions and all necessary information in a single form

2.6 Surveyors trained to use the same approach in a consistent manner



Reports: Dynamic tabular off-line reports stored outside database, standard reporting language

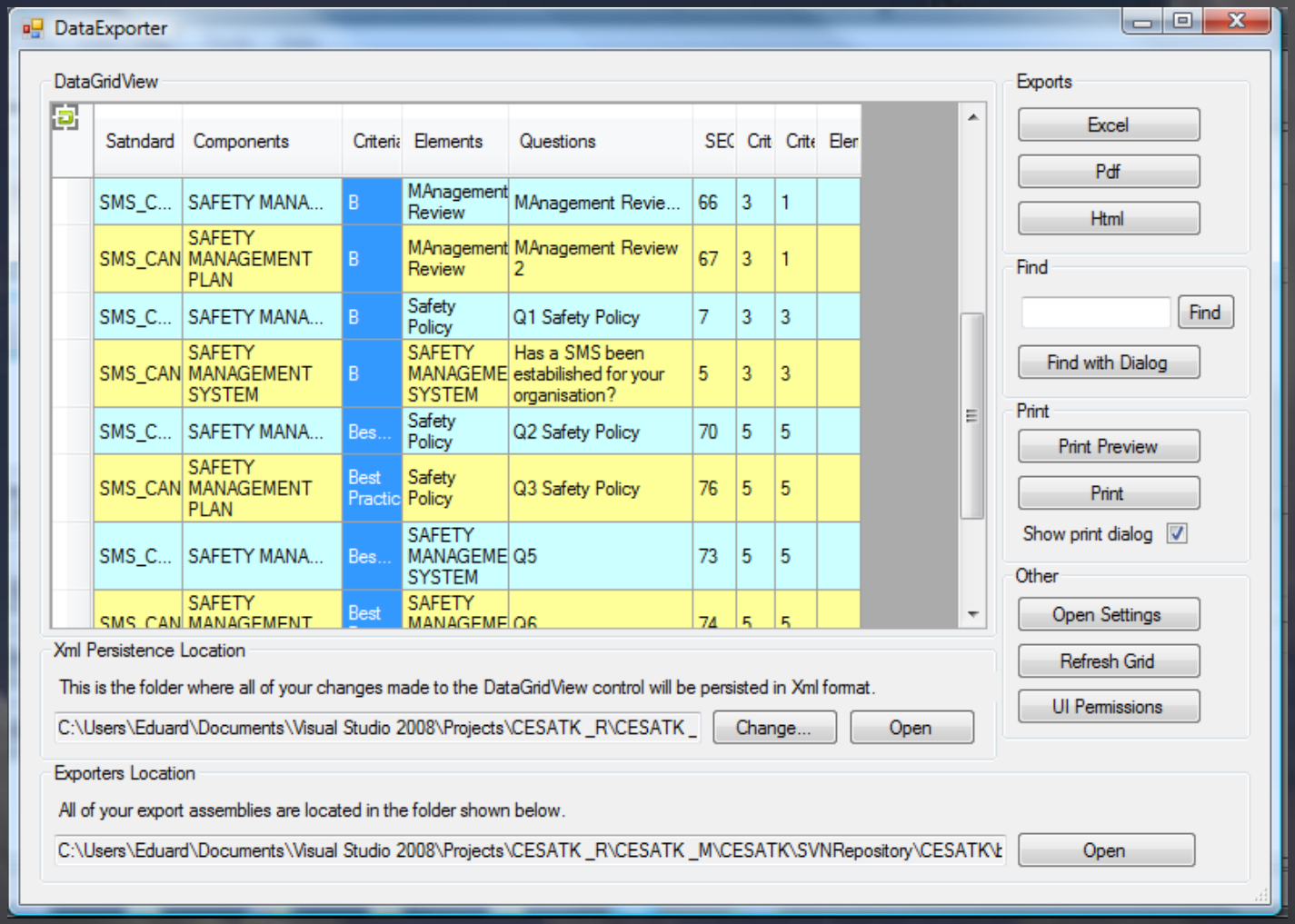
2.7 Surveyors trained to use the same approach in a consistent manner



							SMS_CAN		
								Survey	Criteria Mapping
SAFETY MANAGEMENT PLAN	MAnagement Review (5)	4.72	Level 3 (3:3)	2.3	A	MAnagement Review 1	0.666666666666667	2	3
					B	MAnagement Review 1	0.666666666666667	2	3
						MAnagement Review 2	1	3	3
			Level 5 (5:)	5			1	3	5
		2.25					0.944099378881988	10	14
	Safety Policy (5)	4.31	Level 3 (3:3)	3			1	6	6
			Level 5 (5:)	4.2			0.833333333333333	5	10
		4.39					0.862938596491228	11	16
	6						0.891039426523297	21	30
SAFETY MANAGEMENT	SAFETY MANAGEMEN	4.08	Level 3 (3:3)	2.6			0.866666666666667	13	15

Reports: Web-style predefined dynamic reports stored outside database, standard reporting language, single survey detail

2.8 Surveyors trained to use the same approach in a consistent manner



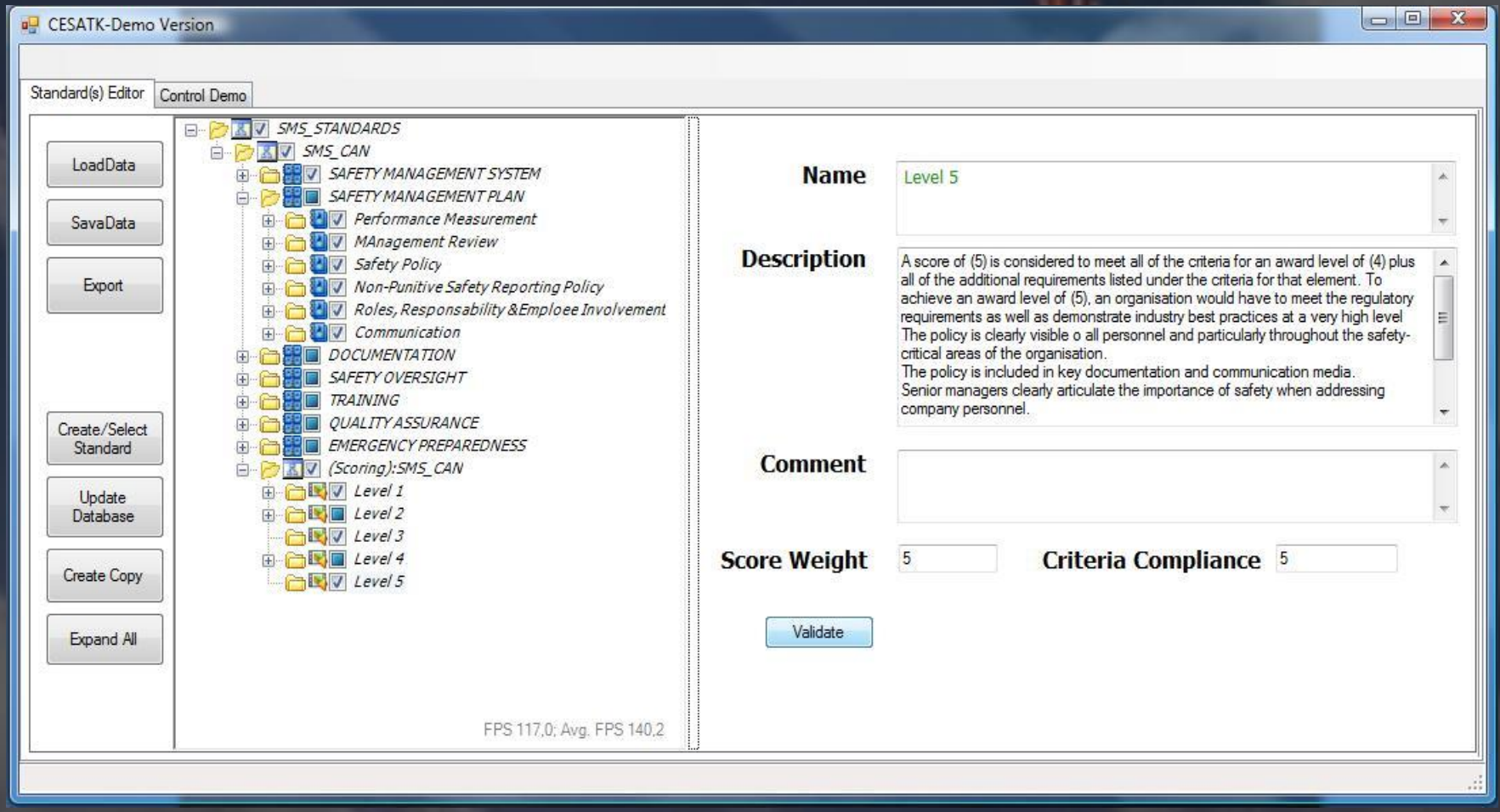
Support functions Preview, Export/Import, Print, with full user customised options

3.1Define your own survey "standard" based on what you are going to survey : SMS, OPS Room, Equipment , etc

Flexible Standard structure to enable different Survey types and complexity in definition

Component	Node containing other components or children element nodes
Element	Node containing question nodes and a single element scoring node
Question	Node that contains Criteria nodes
Global Scoring	Node that is unique for each standard and contains global criteria
Global criterion and	Child node of global scoring and element scoring nodes which are used to compute the score contain element criteria nodes
Element Scoring	Unique child node of an element node that contains element criteria nodes
Element criterion	**N**ode that appears under the Global Criteria nodes

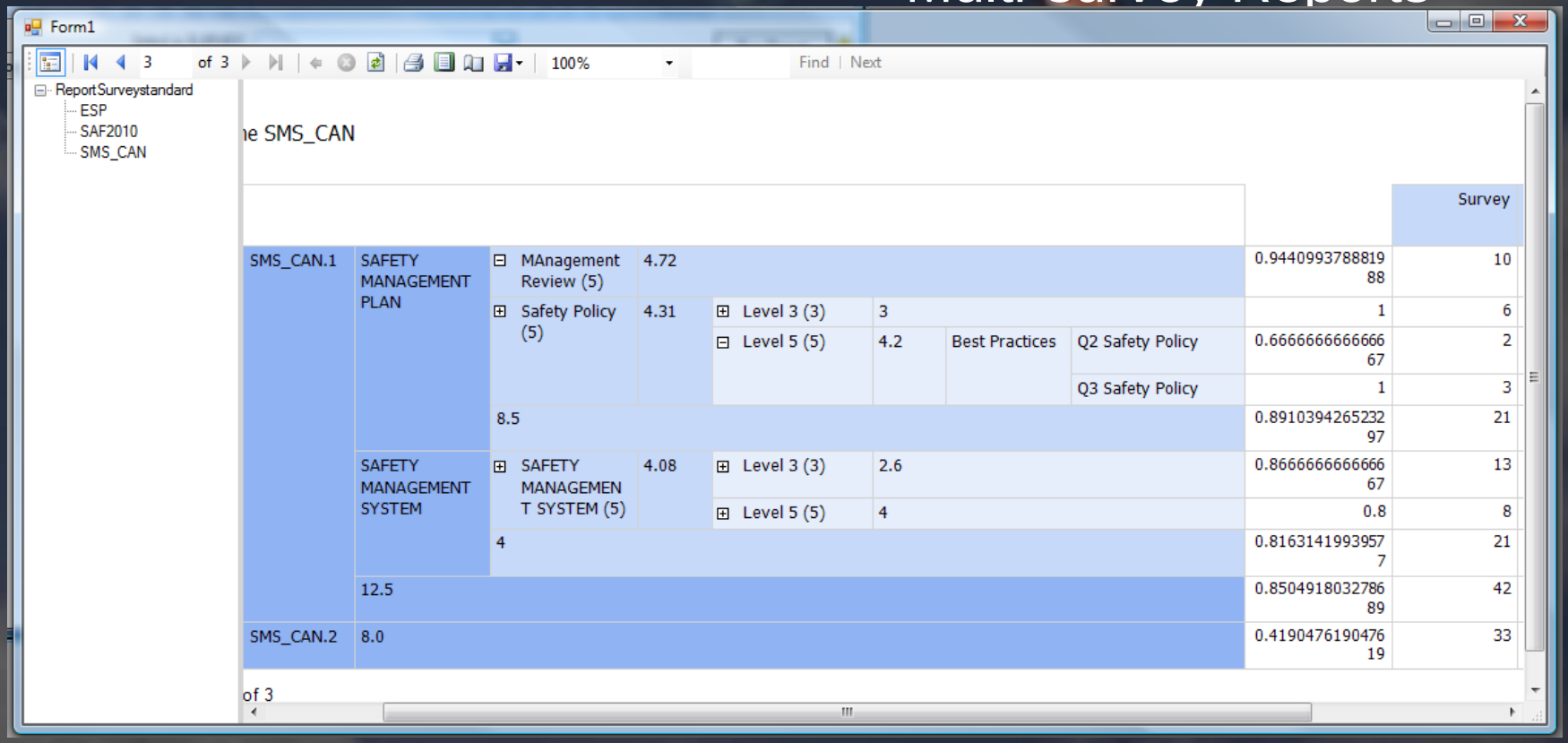
3.2 Define your own survey "standard" based on different survey structure,



Standard Definition: Graphical mapping of database objects identifying survey structure

4. Present the results so as to identify trends, good practices and less good practices

Multi-survey Reports



								Survey
SMS_CAN.1	SAFETY MANAGEMENT PLAN	MAnagement Review (5)	4.72				0.944099378881988	10
		Safety Policy (5)	4.31	Level 3 (3)	3		1	6
				Level 5 (5)	4.2	Best Practices / Q2 Safety Policy	0.666666666666667	2
						Q3 Safety Policy	1	3
		8.5					0.891039426523297	21
	SAFETY MANAGEMENT SYSTEM	SAFETY MANAGEMENT SYSTEM (5)	4.08	Level 3 (3)	2.6		0.866666666666667	13
				Level 5 (5)	4		0.8	8
		4					0.816314199395777	21
	12.5						0.850491803278689	42
SMS_CAN.2	8.0						0.419047619047619	33

Reports: Web-style predefined dynamic reports side-by-side surveys based on standard selection for comparison automatic scoring computation

5.1- User requirements to Functional requirements mapping

Essential Requirements

- Flexibility
- User friendliness
- Versatility
- Adaptability
- Performance
- Cost effectiveness
- Portability

Functional Requirements

- Modularity
- Centered around a relational database
- Efficient HMI
- Open interfaces: e.g. XML Interface for easy exchange of data

CESATK Architecture

- Human Machine Interfaces: allows a human operator to interact with the business applications layer.
- Data processing layer: provides the core functionality, providing HMIs with services and data.
- Database layer: provides access trough queries to the relational database.
- Hardware & Operative System: represents the physical world (not shown on the diagram).

5.2- User requirements to Functional requirements mapping

CESATK Architecture
- Human Machine Interfaces
- Data processing layer
- Database layer
- Hardware & Operative System

CESATK Modules
- HMI Manager

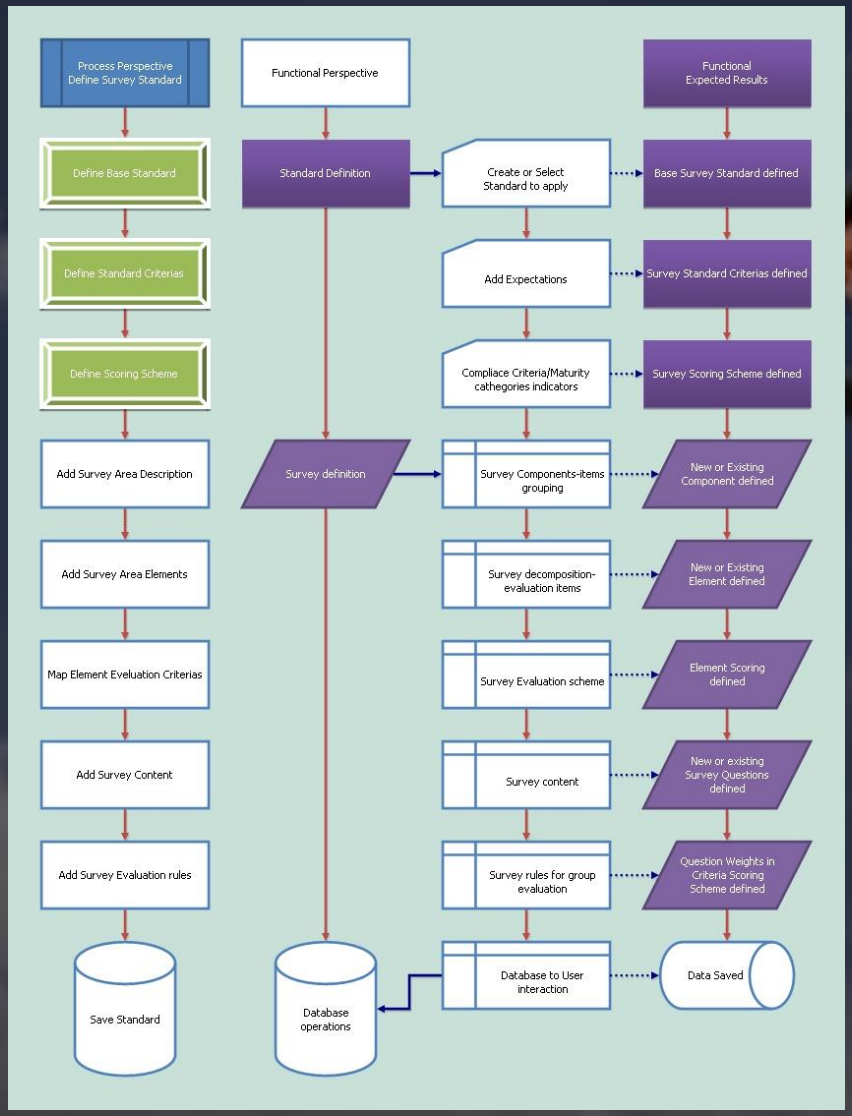
Graphical Components
- Standard(s) Template Editor
- Survey Template Editor, etc

User Customization Component
- User Configuration Files
- Action Mapping to graphical components, etc.

- Database mapping module
  - Data Access Connections
  - Application Data Mapping
  - XML Data Mapping
  - Connectors for graphical components

-Hardware & Operative System
- Integrated OS environment (.NET)

5.3- User requirements to Functional requirements mapping



Process Flow

Example: Define Standard Survey

Mapping between:

- Process perspective
- Functional perspective
- Functional decomposition
- Implementation results