

THE SMART COMPETENCES

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A register of competences for users of SMART
Version 1. 2021



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INTRODUCTION

The SMART Competence Register was developed at the initiative of the SMART Partnership, with the goal of defining and classifying the competences needed to use SMART effectively in adaptive management of conservation sites. Competence can be understood as the proven ability to do a job and is often defined in terms of the required combination of skills, knowledge and attitude.

The competences were developed using the structure and approach provided in the Global Register of Competences for Protected Area Practitioners (Appleton 2016)¹ with information from existing SMART materials and from interviews with users and trainers, through workshops and consultation. The final draft was presented to the SMART Steering Committee and members of the User Council.

The Register defines 64 SMART specific competences, arranged in four functional categories covering competences needed for establishing the enabling environment, for development, deployment and management of SMART, for collecting information from the field and for analysis, reporting and adaptive management. The competences are classified according to four job levels: executive, senior manager, middle manager / technical specialist, skilled worker. Each competence includes a statement of the required skill, a more detailed explanation

of that skill and an indication of the supporting knowledge required.

Many of the competences needed for the effective use of SMART are generic competences needed for the management of a protected area. An indication on the most relevant competence categories from the Global Register of Competences for Protected Area Practitioners is included as an annexe.

The SMART Competence Register is intended to become a useful tool for SMART trainers and users in identifying competence needs and defining capacity building curricula and approaches, and for including SMART related tasks into the job descriptions of staff from SMART teams. Additional tools and guidance will be provided by the SMART Partnership to support easy and meaningful use of the list of competences presented in this document.

The structure of the Register and the formulation of the competences might not fully reflect what is needed for an effective SMART approach. This is Version 1 of the SMART Competences. Revisions and extensions of the register are envisaged as SMART evolves and diversifies its scope of work.

¹ Appleton, M.R. (2016). A Global Register of Competences for Protected Area Practitioners. Gland, Switzerland: IUCN



Tony Lynam | WCS

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This register is based on the work of the many SMART developers and trainers who have identified and indicated in their manuals / guidelines and presentations the skills, knowledge and attitude requirements for the effective use of SMART.

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Individuals working with and within SMART teams helped the process by providing valuable information through the interviews conducted in September – November 2020 (**see Annexe 4**).

TERMS AND ABBREVIATIONS USED IN THE TEXT

CA / Conserved Area	Defined by IUCN as a <i>‘geographically defined area other than a Protected Area, which is governed and managed in ways that achieve positive and sustained long-term outcomes for the in-situ conservation of biodiversity, with associated ecosystem functions and services and where applicable, cultural, spiritual, socio-economic, and other locally relevant values’</i> .
Capacity Development / Capacity Building	Capacity development commonly refers to the overall process of creating and building capacities and their (subsequent) use, management and retention. Capacity building more commonly refers to the specific processes and activities that create capacities (adapted from United Nations Development Programme).
Competence/Competency²	The ability, encompassing knowledge, skills and attitudes, of an individual to perform adequately in a job (International Labour Organization).
Competence Category Codes defined in this Register	EEE – Establishing the Enabling Environment. DDM – Development, Deployment and Management of SMART. FDC – Field Data Collection. ARA – Analysis, Reporting and Adaptive Management
CBD	Convention on Biological Diversity.
Conservation Areas	The term used in SMART to describe Protected and Conserved Areas as defined by IUCN and areas where conservation projects / measures are applied in a structured manner that allow for the use of SMART.
Data protection	As used in this document, this refers to defending individuals’ personal information against accidental or unlawful destruction, loss, alteration, unauthorised disclosure or access, and ensuring it is processed fairly.
Data security	As used in this document, this refers to the practice of protecting digital information from unauthorized access, corruption, or theft throughout its entire lifecycle.
GPS	Global Positioning System.
IUCN	International Union for the Conservation of Nature.
NGO	Non-governmental organisation.
PA	Protected Area. Defined by IUCN as <i>‘a clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values’</i> .
SMART	Spatial Monitoring and Reporting Tool.
SOP	Standard Operating Procedure.
Staff levels	Categories of staff that have similar responsibilities. Four levels are used in the SMART competences.
UNESCO	The United Nations Educational, Scientific and Cultural Organization.

² Note: A more comprehensive glossary of terms related to competencies, education and training (upon which this glossary is largely based) can be found at <http://www.unevoc.unesco.org/go.php?q=TVETipedia+Glossary+A-Z&filt=all&id=109>

PART 1: CONTEXT

The SMART Partnership strongly believes that competent human resources are essential for the successful implementation of SMART. This register aims to provide guidance to define skills, knowledge and personal qualities required by competent SMART users.

This register defines the competences needed for the technical and practical deployment and use of SMART, for creating the enabling environment for SMART to function, and for making use of SMART to improve planning and management of conservation areas. It is intended to serve conservation area managers and partners who are using SMART or planning to use the SMART approach in their biodiversity conservation endeavours. It is an important and useful tool also for individuals and entities that are supporting conservation teams in the preparation, introduction and implementation of SMART.

At the time of writing, SMART is being implemented in more than **1,000 conservation areas** in more than **70 countries** worldwide, striving to be a global standard for wildlife law enforcement, monitoring and management in protected areas (terrestrial, marine and freshwater), community-managed lands, and conservancies³. The list of competences in this register is built on the experience of implementers and technical support persons engaged in the SMART process around the globe.

Effective deployment and use of SMART, and its use to promote and support adaptive management of conservation areas require defined levels of human capacity. SMART teams need personnel with management competencies, analytical and computer skills, competences for processing and evaluating field and patrol data, for effective communication between managers and field staff, as well as with local communities. However, user surveys have shown that capacity building efforts and resource materials on SMART are often not sufficient to provide adequate guidance to users.

A comprehensive register of the specific competences for effective use of SMART provides a benchmark of what is required, based on existing training materials and the experience of users. It can help managers of conservation areas to establish their teams, to understand their capacity needs, and to design

and implement capacity development plans that are responsive to the needs of those involved. The register can also help managers and human resources departments to design effective staffing structures and to develop focused job descriptions and terms of reference. It can also help training providers to conduct thorough assessments of the needs of their target groups, and to ensure that learning outcomes and training activities address all those needs. The register can also support self-assessment tools by SMART users, helping them understand their own needs and encouraging them to pursue opportunities for improving their skills and knowledge.

The approach in structuring and defining the competences is inspired by the Global Register of Competences for Protected Area Practitioners (Appleton, 2016), referred to hereafter as the Protected Area Competence Register, which includes a more detailed overview of the competence approach.



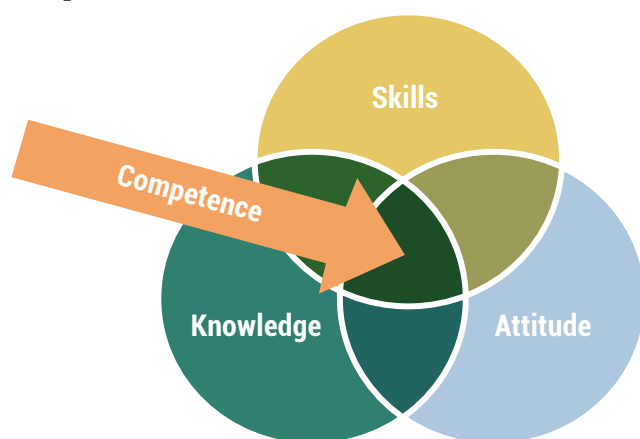
³ SMART: A guide to getting started, 2017

PART 2: THE COMPETENCE APPROACH – A BRIEF INTRODUCTION

A short explanation of the key terms and concepts used within the Register is provided in this chapter.

Competence derives from the combination of skills, knowledge and attitude (S-K-A). A competent individual can clearly demonstrate that he/she has knowledge on the theoretical and technical aspects of a specific task, is able to perform that task reliably and consistently and complete it conscientiously.

Figure 1. The Skills-Knowledge-Attitude model for competence



- **Skills** refer to the ability to perform tasks and solve problems.⁴
- **Knowledge** is about the outcome of the assimilation of information through learning. Knowledge is the body of facts, principles, theories and practices that is related to a field of study or work.
- **Attitude** is about a stable, long-lasting, learnt predisposition to respond to certain things in a certain way. Attitudes are formed on the basis of beliefs, feelings and intentions⁵. Having the right attitude helps ensure that an individual completes the task positively, professionally, ethically and conscientiously⁶.

Competence-based approaches to capacity building are based around proven acquisition of the skills, knowledge and attitude needed for effective implementation of tasks and functions (see Figure 1).

Within the context of this Register, the competence-based approach to capacity building refers to providing learning opportunities that enable staff involved in SMART approaches to biodiversity conservation to develop or acquire the skills, knowledge and attitude needed to effectively perform tasks required of them to contribute to the effective use of SMART.

4 European Centre for the Development of Vocational Training, <https://www.cedefop.europa.eu/en>

5 Glossary of Adult Learning in Europe, <https://uil.unesco.org/adult-education/glossary-adult-learning-europe>

6 Appleton, M.R. (2016). A Global Register of Competences for Protected Area Practitioners. Gland, Switzerland: IUCN

PART 3: WHAT IS THE SMART COMPETENCE REGISTER?

The SMART Competence Register presents a list of skills and associated knowledge requirements (competences) relevant to specific tasks required for using the SMART approach in a conservation area or for a network of conservation areas. It covers the competences needed by all types of staff involved in the implementation of SMART, from senior officials (if SMART is adopted at the national / regional level) to site-level implementers.

This register builds on concepts and the structure used in the Protected Area Competence Register, a document that has introduced the concept of competence-based capacity building approaches for nature conservation practitioners in protected areas, based on skill and knowledge acquisition and the ability to apply those in performing tasks.

The competences are structured for the personnel levels defined in the Protected Area Competence Register, according to the complexity of tasks and levels of responsibility associated with them, and identifies four competence categories relevant for the use of the SMART approach.

The Register should be used as a tool to help individuals and organisations to adopt the ‘competence approach’ as a practical way of building capacity effectively, affordably and equitably. It was compiled based on the experience of SMART users and trainers around the world and from existing SMART manuals and training materials, as well as using information provided by the 24 users interviewed. Online webinars were organized to discuss the draft competence list and a second draft developed based on the discussion with

the 18 participants. The final version was developed using the feedback received in the consultation process conducted on the second draft.

The SMART Competence Register can be used by anyone involved in building / improving capacities and performance of people who are working with SMART, including:

- SMART trainers;
- Stewards of all types of protected and conserved areas;
- Protected area management teams;
- NGOs supporting SMART users;
- Human resource management specialists;
- Individuals working with SMART within conservation areas and projects.

Basics of the competence-based approach are explained very briefly in the document. References are included for those who wish to explore the topic in more depth. A detailed explanation of how the Register is constructed and what it includes is provided in Chapter 4. Consulting this section is critical for understanding the competences in detail.

The actual Register (i.e., the list of competences structured by competence categories and staff levels) is presented in **Chapter 5**.



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PART 4: THE STRUCTURE OF THE SMART COMPETENCE REGISTER

4.1 Structure of the competences

The SMART competences are structured by personnel levels, using four competence categories, as described in this chapter.

4.1.1 Personnel levels

The competences are defined based on four levels of personnel derived from Appleton (2016), based on the type of work they do and responsibilities they have. The levels are summarised in **Table 1**.

The numbers associated with staff levels (1–4) are not about hierarchy – each member of a team has an important role to play. These numbers are useful to avoid confusions arising from using generic job titles, which may signify different duties and responsibilities in different organisations. The numbers also help with coding and sorting the competences and for database management.

Job levels can be associated with:

- Conventional job titles (e.g., director, manager, ranger, field staff);
- Conventional management structures of protected areas;
- National, regional or local government officials.
- Personnel of various entities (e.g., management agencies of natural resources, like forestry or water management agencies);
- Local communities;
- Civil society organizations;
- Private sector organizations.

The levels used to structure the list of competences might not be relevant for all the entities using SMART. However, this should not be an impediment for using the competences, as individuals with different positions in the SMART team require competences from different personnel levels. For example, a person who is responsible for organizing and supervising patrols should have competences at least from level 2 and 1 and, if they have a position that covers responsibilities of head rangers, they should most certainly have competences from level 3 (as a member of the senior management team of a protected area).



Table 1. Definitions of levels used in the SMART competence register.

LEVEL	LEVEL 4 EXECUTIVE	LEVEL 3 SENIOR MANAGER	LEVEL 2 MIDDLE MANAGER/ TECHNICAL EXPERT	LEVEL 1 SKILLED WORKER
Generic role	- Central direction and management of large organizations. - National and regional policy development, spatial and strategic planning. - Cross sectoral coordination. - Direction of complex programmes and plans.	- Direction and management of medium-sized organization. - Planning and management of projects and programmes within strategic frameworks. - Conducting and leading technical complex programmes (according to specialty).	- Management, organization and leadership of technical sections and teams implementing plans and projects. - Completing specific and complex technical assignments (according to technical specialty).	Completing specific and sometimes complex tasks and assignments under regular supervision.
Typical positions in the context of SMART	Centrally based decision makers and senior managers for area-based management.	- Conservation area directors and managers. - Central managers with specific responsibility for area management.	- Conservation area section heads and technical specialists (e.g., head ranger, ecologist, IT manager) - Central technical specialists.	- Conservation area field-based staff. (Rangers, outreach workers, tourism workers etc.).
Typical role in the context of SMART	Establishing the enabling environment and operational framework for official and integrated deployment and use of SMART at the national/regional level).	Enabling and directing deployment and use of SMART at the site level; developing the framework for setting up SMART and coordinating data collection, analysis and reporting.	- Administrator/Analyst: operating, maintaining and updating the entire SMART system to ensure the flow of data between the field and management. Providing reports and analyses. - Technical specialist: using SMART for data collection and analysis to monitor and improve performance.	Collecting data in the field according to agreed systems and methods.

4.1.2 Competence categories

Competences are grouped in four categories in this Register. Each category has a three-letter code and title. A brief description of the overall competence is provided below:

Category EEE – Establishing the Enabling Environment

Establishing the enabling environment and operational framework for official and integrated deployment and use of SMART at the (inter)national level.

Category DDM – Development, Deployment and Management of SMART

Deploying and setting up the SMART system and managing its use and outputs.

Category FDC – Field Data Collection

Planning and implementing collection of data for SMART.

Category ARA – Analysis, Reporting and Adaptive Management

Analyse and report on SMART outputs and use the results to adapt and improve management.

4.1.3 Combining categories and levels

Table 2 presents general competence statements for each competence category at each relevant personnel level. These statements describe broadly what an individual whose position is equivalent to a certain level should be able to do.

Table 2. Summary of SMART competence categories and levels

CATEGORY	Overall competence	Level 4 general competences	Level 3 general competences	LEVEL 2 general competences	LEVEL 1 general competences
		The individual should be able to.....			
EEE Establishing the Enabling Environment	Establishing the enabling environment and operational framework for official and integrated deployment and use of SMART at the (inter) national level	Enable the establishment of (inter)national policies and other measures to support effective deployment and use of SMART.	Enable the establishment of SMART to support effective and adaptive management in a conservation area.	Build understanding of and engagement in SMART at the operational level.	Not applicable
		7 specific competences.	7 specific competences.	4 specific competences.	
DDM Development, Deployment and Management of SMART	Deploying and setting up the SMART system and managing its use and outputs	Not applicable	Direct conservation area-based deployment of the SMART system.	Set up and maintain the SMART system.	Not applicable
			5 specific competences.	12 specific competences.	
FDC Field Data Collection	Planning and implementing collection of data for SMART	Not applicable	Direct planning and implementation of SMART data collection.	Plan and coordinate field data collection and support responsible personnel.	Collect information from the field for the SMART system.
			5 specific competences.	4 specific competences.	8 specific competences.
ARA Analysis, Reporting and Adaptive Management	Analyse and report on SMART outputs and use the results to adapt and improve management	Integrate SMART into high-level reporting, policy development, management and resource allocation.	Use SMART to document, assess, adapt and improve area level management.	Analyse and report on SMART outputs and operationalise adaptive management.	Not applicable
		4 specific competences.	3 specific competences.	5 specific competences.	

4.2 Components of the competences

Each category at each level is assigned a set of competences describing the associated skills and tasks. The list of competencies, organized by categories and levels is presented in the tables in Chapter 5, structured as follows:

Column A contains the **code and number associated with the competence**, reflecting the category and the level. For example, EEE 3.2 means that the competence is from the Establishing the Enabling Environment category, is at level 3 and has the specific identification number 2.

Column B presents the **definition** describing the specific ability required for that category and at that level. It should complete the sentence: “At this level an individual working in this category should be able to”.

Column C describes in more **detail** the definition, explaining what it involves and outlining typical variations, so that the competence can be clearly understood.

Column D presents the **main knowledge** requirements, giving a brief list of suggested knowledge requirements for the competence. This is a list of specific facts and principles required to understand the context and for completing the task.

4.3 An example of a competence

This section explains how to read a competence from the Competence Register presented in Chapter 5, using an example from category DDM.

The four competence categories are shown as the major headings in the table, including the overall competence definition. Each category has a different colour code.



CATEGORY DDM		
DEVELOPMENT, DEPLOYMENT AND MANAGEMENT OF THE SMART SYSTEM		
Deploying and setting up the SMART system and managing its use and outputs		

Within this category, competences are grouped by levels 3 and 2. There are no relevant competences within this category for level 4 and level 1 personnel.

Each level has an “introductory line” with the level code and number (DDM 2), the overall statement of competence for this category and this level, and a summary of general requirements for supporting knowledge and understanding.



LEVEL 2: DEVELOPMENT, DEPLOYMENT AND MANAGEMENT OF THE SMART SYSTEM		
LEVEL CODE	OVERALL COMPETENCE FOR THE LEVEL	GENERAL SUPPORTING KNOWLEDGE FOR THE LEVEL
DDM 2	Set up and maintain the SMART system	In depth technical expertise and experience in SMART set-up and use

Within DDM Level 2 there are twelve specific competences. DDM 2.10 is presented as an example here.

Column A presents the code and number of the competence. Column B provides the basic definition; Column C presents details, explaining the competence; and Column D provides suggestions for the background knowledge required.



Code	Competence Statement <i>The individual should be able to:</i>	Details, scope and variations <i>A brief explanation of the competence.</i>	Main knowledge requirements for the competence
A	B	C	D
DDM 2.10	Provide technical support to ensure functionality of the SMART system (hardware and software)	- Diagnosing problems and malfunctions, identifying and correcting errors: - in the SMART database. - on computers/field devices and other devices used for SMART - Ensuring software and hardware are updated and maintained. - Working with users to ensure that equipment is correctly used and maintained.	- Extensive technical knowledge of hardware and software in use. - Testing and diagnosis of hardware and software problems - Communication skills.

The Register also includes a reference to competences already described in the Protected Area Competence Register that are considered highly relevant for SMART users (**see Annexe 1**).



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PART 5: THE SMART COMPETENCE REGISTER

CATEGORY EEE ESTABLISHING THE ENABLING ENVIRONMENT FOR SMART

Establishing the enabling environment and operational framework for official and integrated deployment and use of SMART at the (inter)national level

LEVEL 4: ESTABLISHING THE ENABLING ENVIRONMENT FOR SMART

LEVEL CODE	OVERALL COMPETENCE FOR THE LEVEL		GENERAL SUPPORTING KNOWLEDGE FOR THE LEVEL
EEE 4	Enable the establishment of (inter) national policies and other measures to support effective deployment and use of SMART		• Good understanding of SMART and its potential uses and benefits. • National policy and legislation regarding biodiversity and conservation site management.
Code	Competence Statement <i>The individual should be able to:</i>	Details, scope and variations <i>A brief explanation of the competence.</i>	Main knowledge requirements for the competence
A	B	C	D
EEE 4.1	Establish the necessary legal and institutional conditions for (inter) national adoption and use of SMART	• Coordinating establishment of legal and other instruments required for official adoption and use of SMART. • Integrating SMART into regional and national biodiversity policies (e.g., National Biodiversity Action Plan) to secure continuity of use. • Coordinating establishment of minimum institutional requirements for integrated use of SMART. • Coordinating establishment of system-wide standards, norms and procedures for use of SMART (e.g., system-level SMART Standard Operating Procedures (SOPs)).	• National policy and legislation regarding biodiversity and PA/ area-based management. • Requirements for the effective use of SMART, SMART resource needs and enabling conditions. • Best practice for SMART administration • SMART SOP system

EEE 4.2	Build institutional capacity for (inter)national SMART deployment, use and management	- Ensuring that relevant authorities have the personnel, and technical capacity to deploy and use SMART (e.g., for setting up and operating SMART, collecting, managing and analysing data, providing up-to-date guidance, building SMART into planning, decision making and adaptive management). - Defining roles and responsibilities for deploying and using SMART. - Coordinating establishment of systems and processes for effective SMART deployment, performance monitoring and review. - Supporting/promoting system-wide capacity building for ensuring quality inputs and upstream data flows, and using SMART for adaptive management.	- Principles and practices of organizational capacity development - National policies and practices for administering and resourcing PAs. - Options for securing resources and improving capacity. - Overall capacity requirements for use and deployment of SMART. - SMART Guide to Getting Started Terrestrial and Marine.
EEE 4.3	Secure the necessary infrastructure and equipment for (inter)national SMART deployment, use and management	- Coordinating identification and procurement of infrastructure and other resource needs for the integrated use of SMART across multiple sites. - Securing necessary investment for SMART deployment and sustained use (from national budgets and from donors and other sources).	- Resource requirements for effective implementation of SMART. - Legal framework and procedures for national level budgeting. - National and regional donor agencies and funding programmes.
EEE 4.4	Coordinate (inter)national deployment of SMART integrated into relevant legislation, policies and plans	- Identifying (inter)national level objectives and indicators for SMART deployment and use. - Ensuring that SMART is set up to reflect targets, frameworks and processes established in international, regional and national biodiversity strategies, action plans and policies. - Coordinating participatory processes (involving site level staff) to design system-wide data models, queries and report templates based on (inter)national / regional needs and integrated with relevant national, regional and international databases. - Integrating SMART where relevant into other processes for conservation planning, management, documentation and reporting (e.g., protected area management planning, national reporting to the CBD).	- Good understanding of SMART. - National level objectives defined for biodiversity conservation and for the PA / CA system. - Participatory planning and consultation methods. - Tools for identifying priority objectives for conservation at (inter)national level.
EEE 4.5	Ensure compliance of SMART with data protection and data security policies and legislation	- Ensuring compliance of SMART systems with relevant policies and legislation regarding data protection and information privacy (at national and international levels). - Ensuring establishment / adaptation of data security systems, protocols and associated guidance to prevent unauthorized / illegal access and use of SMART data at all levels.	- National and international norms and protocols for data privacy and security. - Knowledge of data security and protection laws and regulations relevant for the jurisdiction / organization / country in the use of SMART. - SMART Best Practice Security Advice.

EEE 4.6	Establish collaborative relationships for implementing SMART with supporting / interested entities and partners at the (inter)national level	- Identifying partners among institutions / agencies, civil society organizations or private sector organizations at the (inter)national level. - Negotiating agreements with supporting organizations. - Developing appropriate cooperation frameworks to enable regular networking, communication and information sharing with entities supporting/involved in the implementation of SMART. - Engaging with and contributing to the SMART Partnership.	- Inter(national) entities supporting SMART implementation and with interests relevant for aspects covered through the use of SMART. - Networking and partnership building skills.
EEE 4.7	Contribute to developing and updating policies, systems, processes and standards that support the effective deployment and use of SMART	May apply at the national or international level to: - Standards and operating procedures for law enforcement, crime prevention and security in a PA system, - Standard procedures for survey and monitoring of biodiversity, threats, socio economic conditions etc, - Organisational human resource management policies.	- Policies and systems relevant to conservation and environmental protection. - SMART SOPs and country specific standards.

LEVEL 3: ESTABLISHING THE ENABLING ENVIRONMENT FOR SMART			
LEVEL CODE	OVERALL COMPETENCE FOR THE LEVEL		GENERAL SUPPORTING KNOWLEDGE FOR THE LEVEL
EEE 3	Enable the establishment of SMART to support effective and adaptive management in a conservation area		• Good understanding of SMART and its potential uses and benefits at the area level. • Familiarity with SMART terminology. • Legislation and organizational policies and procedures for area-based planning and management.
Code	Competence Statement <i>The individual should be able to:</i>	Details, scope and variations <i>A brief explanation of the competence.</i>	Main knowledge requirements for the competence
A	B	C	D
EEE 3.1	Lead a feasibility assessment to determine the potential for deployment and use of SMART for a conservation area	• Identifying the aspects of site management to which SMART could effectively contribute (e.g., protection, biodiversity monitoring, tourism and visitor management, site use and management etc.). • Reviewing current capacities for deployment and use of SMART and identifying gaps and needs (e.g., connectivity, equipment, infrastructure, personnel, training, operating procedures and practices etc.). • Reviewing current systems and processes based on requirements for effective deployment and use of SMART and for identifying gaps and needs (e.g., management planning, operational planning, operating procedures, documentation, reporting etc.). • Preparing a feasibility assessment (including budget).	• All aspects, uses and requirements for SMART. • Consultation and facilitation skills. • Analytical and assessment skills. • Synthesis and reporting skills.
EEE 3.2	Secure the infrastructure, equipment and investment needed use of SMART in a conservation area	• Establishing resources required for SMART (e.g., hardware, software, connectivity etc.). • Adapting current infrastructure to SMART requirements. • Securing required funding for deployment and use of SMART (e.g., through adjustments to site budgets, formulating official requests for central budget allocation, preparing proposals to donors etc.).	• All resource and infrastructure requirements for deployment of SMART at various scales.
EEE 3.3	Ensure development of required individual capacity for use of SMART in a conservation area	Relates to all aspects of SMART use (e.g., system set up, data gathering, collation and analysis, interpretation and adaptive management). • Defining roles, responsibilities and job descriptions. • Conducting structured capacity needs assessments for all personnel using a competence-based approach. • Preparing training and learning plans according to identified needs. • Organising formal and informal training/learning programmes (including refresher and update programmes), engaging trainers, coordinating with training organisations etc. • Assessing the quality and impact of training.	• The SMART Competence Register. • The Global Register of Competences for Protected Area Practitioners. • Training and learning needs assessment techniques. • Options for provision and delivery of training and learning. • Methods for assessing impact of training and learning.

EEE 3.4	Build and update organizational capacities for effective use of SMART in a conservation area	- Ensuring a site-wide understanding of the purpose, operation and benefits of SMART. - Ensuring the adaptation of survey, monitoring and patrol procedures and activities to ensure compatibility with SMART use. - Ensuring the adaptation/development of information management and flows within the SMART system and the site management structure. - Integrating SMART into systems for management planning, operational planning, monitoring and evaluation, reporting, decision making and adaptive management. - Establishing performance indicators related to SMART and integrating them in the overall performance indicator system. - Assessing and reviewing performance and effectiveness of SMART at the site level.	- Principles and practices of effective organisational management. - Specific organisational management policies and procedures relevant to the conservation area (e.g., management structures, roles and responsibilities, human resources, planning and operations, monitoring and reporting). - SMART enabling conditions. - Principles of performance assessments and use of various types of indicators. - Site management plan, organizational development plan and business plan. - Competence-based approaches to human resource planning and management.
EEE 3.5	Ensure a high level of data protection and privacy and of data security in a conservation area	- Establishing and maintaining organisational procedures, infrastructure and training required for full compliance with data protection and privacy legislation and regulations. - Establishing an organisational culture for data security (linked to operational security). - Establishing and maintaining procedures, infrastructure and training required to ensure best possible security of data and information in the SMART system.	- Data security and protection laws and regulations relevant for the jurisdiction / organization / country in the use of SMART. - Specific threats to data security and protection for the conservation area. - Main options for data protection and security. - SMART Best Practice Security Advice.
EEE 3.6	Maximise the potential for SMART to support multiple aspects of site management	- Recognising and communicating the diverse ways in which SMART can support management beyond law enforcement. (e.g., biodiversity monitoring, monitoring the benefits and results of community support programmes, monitoring visitor behaviour and site use patterns, monitoring infringements on community land and resource rights etc.). - Working with different stakeholders to identify the potential of SMART and to adapt SMART to their needs. - Integrating SMART into multiple aspects of management plans and projects.	- All potential uses of SMART. - Details of the management objectives of the conservation area. - Local community interests in resource use and law enforcement in and around the conservation area. - Communication skills.
EEE 3.7	Build collaborations with other entities engaged in SMART field data collection	- Ensuring regular communication with other entities and groups engaged in field data collection in the area (e.g., neighbouring conservation areas, forestry, game management or water management agencies). - Promoting compatible use of SMART with other groups (e.g., through collaboration agreements, joint field data collection activities).	- Range of stakeholders and partners and their needs / interest in SMART. - Communication techniques.

LEVEL 2: ESTABLISHING THE ENABLING ENVIRONMENT FOR SMART			
LEVEL CODE	OVERALL COMPETENCE FOR THE LEVEL		GENERAL SUPPORTING KNOWLEDGE FOR THE LEVEL
EEE 2	Build understanding of and engagement in SMART at the operational level		• Good understanding of SMART and its potential uses and benefits. • Familiarity with SMART terminology. • Management and operational plans and operations in the relevant conservation area.
Code	Competence Statement <i>The individual should be able to:</i>	Details, scope and variations <i>A brief explanation of the competence.</i>	Main knowledge requirements for the competence
A	B	C	D
EEE 2.1	Communicate with stakeholders about the purpose, uses and benefits of SMART	• Explaining and discussing SMART using language and communication techniques adapted to the target audience. • Sharing and communicating accurately the uses and benefits of SMART. • Explaining why and how the site is using SMART and the benefits for the site and for personnel. • Maintaining effective day to day communications and good working relations between site level SMART users.	• Value of monitoring systems. • Use and applications and benefits of SMART. • A range of communication techniques relevant to different audiences. • Principles and practices of effective teamwork and collaboration. • SMART Guide to Getting Started Terrestrial and Marine.
EEE 2.2	Supervise and motivate individuals and teams implementing SMART	• Providing detailed instructions and directions to individuals and teams using appropriate techniques and language. • Ensuring effective and efficient completion of assigned tasks, monitoring performance and providing feedback to teams and individuals and guidance on improvement. • Ensuring teams have adequate resources to complete their assigned tasks and that their health, safety and welfare needs are addressed. • Communicating best practice examples from the wider SMART community. • Sharing results and outputs from SMART implementation.	• Personnel procedures of the PA. • Motivational and instructional techniques. • Technical details of the tasks to be completed. • Principles and practices of effective teamwork and collaboration.
EEE 2.3	Plan and organise delivery of training and learning activities for field -based SMART users	• Designing and delivering short training courses, sessions/events involving both theoretical and practical elements. • Provide mentoring and guidance for colleagues and supervised staff. • Enabling informal 'on the job', self-directed and peer to peer learning.	• SMART competences and training materials. • Training and capacity development approaches and techniques. • Mentoring and coaching skills and techniques. • Relevant technical expertise.
EEE 2.4	Address capacity issues and needs with management	• Identifying needs, problems and shortcomings and communicating them to management. • Identifying and advocating solutions.	• Communication skills (with field staff and with management).

CATEGORY DDM

DEVELOPMENT, DEPLOYMENT AND MANAGEMENT OF THE SMART SYSTEM

Deploying and setting up the SMART system and managing its use and outputs

DDM LEVEL 3

LEVEL 3: DEVELOPMENT, DEPLOYMENT AND MANAGEMENT OF THE SMART SYSTEM

LEVEL CODE	OVERALL COMPETENCE FOR THE LEVEL		GENERAL SUPPORTING KNOWLEDGE FOR THE LEVEL
DDM 3	Direct conservation area-based deployment of the SMART system		- In depth expertise and experience in SMART set-up and use. - Familiarity with SMART terminology.
Code	Competence Statement <i>The individual should be able to:</i>	Details, scope and variations <i>A brief explanation of the competence.</i>	Main knowledge requirements for the competence
A	B	C	D
DDM 3.1	Direct installation and setup of hardware and software required for SMART	- Ensuring that all required hardware and software are available. - Ensuring hardware is correctly installed and tested. - Ensuring that required software is correctly installed, tested and licensed. - Ensuring that required connectivity is established. - Ensuring that back up and electrical protection systems are installed. - Setting up an operations room (where required / possible).	All technical requirements for installation and setup of SMART for a range of uses and needs.
DDM 3.2	Direct setup and customisation of SMART according to specified requirements	May be at the site, national or regional levels. - Ensuring appropriate inputs from users and stakeholders into system design and set up (e.g., through meetings, discussions and workshops). - Defining key elements for data models, queries and report templates, based on the site management objectives. - Ensuring development of Standard Operating Procedures (SOP) for data management and information flows and field data collection. - Integrating national /regional level SMART SOPs and data models into site level SMART set up. - Defining minimum information needs for using SMART to support effective and adaptive management.	- Specific requirements of the SMART users). - PA / CA management plans, management objectives, conservation targets and goals. - All technical requirements for installation and setup of SMART for a range of uses and needs. - All procedures for SMART setup.

DDM 3.3	Direct development of standard data collection protocols compliant with SMART	- Working with operational managers, field staff, technical specialists and other relevant SMART users to develop/adapt data collection protocols compatible with SMART system setup. - Developing data collection protocols relevant to the purposes and needs defined for the SMART deployment.	- Technical knowledge of the data collection needs and current protocols. - Sources of advice and expertise. - Specific needs and priorities for the site.
DDM 3.4	Direct the operation and maintenance of the SMART system	- Leading and supporting technical staff responsible for SMART operation and maintenance. - Ensuring all required elements of SMART are set up in the system according to specifications. - Ensuring that programmes of maintenance, update, backup, testing are established and followed. - Ensuring that SOPs are correctly used. - Leading the response to system errors and breakdowns. - Soliciting feedback from managers, field staff and other stakeholders in order to improve the operation of the SMART system.	- Technical knowledge of the operation of the SMART system. - Familiarity with the day-to-day operations of SMART and the teams using SMART. - Good understanding of the SMART Open Standards. - Techniques for IT, management and operational systems analysis and problem identification.
DDM 3.5	Direct periodic formal assessments of SMART implementation effectiveness and performance	- Establishing formal systems for comprehensive reviews of the functioning of SMART. - Consulting all users to determine if SMART is functioning as expected / required and is in line with management plans. - Determining required needs to improve/update operations. - Incorporating updates into management and organisational processes.	- Technical knowledge of the operation of the SMART system. - Plans, systems and processes in use for the management of the area and its responsible organisation. - Communication and facilitation skills.

LEVEL 2: DEVELOPMENT, DEPLOYMENT AND MANAGEMENT OF THE SMART SYSTEM			
LEVEL CODE	OVERALL COMPETENCE FOR THE LEVEL		GENERAL SUPPORTING KNOWLEDGE FOR THE LEVEL
DDM 2	Set up and maintain the SMART system		- In depth technical expertise and experience in SMART set-up and use. - Familiarity with SMART terminology.
Code	Competence Statement <i>The individual should be able to:</i>	Details, scope and variations <i>A brief explanation of the competence.</i>	Main knowledge requirements for the competence
A	B	C	D
DDM 2.1	Set up the SMART database according to defined requirements	- Setting up the SMART database, integrating system and/or site level needs, based on the objectives defined for the SMART system and the management of the relevant area(s). - Creating, maintaining and adapting agreed configurable data models based on specific mandates or on specific needs / requirements. - Creating standard queries and reports according to agreed specifications. - Defining or importing GIS layers (e.g., conservation area limits, patrolling sectors, administrative zones) and key patrol parameters (e.g., patrol stations, staff, mandates, transport options). - Integrating agreed data collection techniques, events and information recording, monitoring methods, administration and data management into the SMART system. - Building and configuring "easy-to-use" sequences for data collectors.	- In-depth IT management (hardware and software). - Specific in-depth knowledge of SMART functionalities and setup procedures. - Good knowledge of main required software packages (GIS, Excel etc.) - Good knowledge of relevant operating systems and platforms. - Communication and consultation skills.
DDM 2.2	Set up the SMART system to integrate specified requirements of the site or system of sites	- Setting up the SMART system as required to address identified information and management needs. For example: - Law enforcement/wildlife crime prevention. - Biodiversity value (asset) survey / monitoring. - Public use and visitation. - Natural resource use survey / monitoring. - Surveys of cultural and historic sites, structures and artefacts. - Data collection and surveys possibilities requested by / useful for local communities. - Needs associated with national/international site designation (e.g., RAMSAR UNESCO, NATURA 2000, etc.).	- SMART functionalities. - Understanding of the objectives / goals, targets and associated indicators defined for the site (e.g., related to biodiversity conservation; tourism, recreation and visitor management; natural resource use; cultural values; pressures and threats). - Understanding of survey / monitoring protocols / procedures and indicators at the site level.

DDM 2.3	Provide continuous monitoring, maintenance and updating of the SMART system	• Overseeing and managing data models, analysis and reporting templates for the SMART system (at the national or site level). • Using tools as needed to enable communication within/between SMART systems (e.g., using Connect, cloud services). • Keeping the SMART system up to date, pushing updates and system upgrades across the area or national level SMART system. • Checking and maintaining SMART quality (configurable data model, collected data/information, report templates, workflows). • Updating the database according to adaptive management needs at site level. • Upholding and updating data and database standards throughout the user base. • Keeping records of changes operated in the database. • Developing and maintaining the guide and document that tracks changes and metadata within the data or information collected. • Maintaining the database and data model document and definitions for query purposes at the national or site level.	• Comprehensive technical knowledge of SMART in general and of the installed system.
DDM 2.4	Integrate SMART with other relevant databases and data sources	• Importing relevant information from other databases into the SMART database. • Transferring historic data into the SMART database. • Integrating SMART data into other systems. • Complementing SMART data with additional data from other platforms (e.g., Global Forest Watch).	• Data transfer/storage systems and protocols. • Other relevant data source formats (GIS systems, databases, etc.).
DDM 2.5	Apply standard operating procedures for data protection and privacy and for data security	• Assessing data security and protection levels to identify potential security gaps within the current system (by evaluating current infrastructure and current workflows). • Developing proposals for improvements to data protection and security. • Establish and maintain appropriate user levels/access rights for the SMART system. • Ensuring that SMART users are aware of data security risks and responsibilities. • Reporting any issues related to data security. • Identifying how SMART can assist and become a solution to security issues.	• Knowledge of the legal framework related to data security and protection. • Institutional / organisational policies for data security according to laws and regulations. • Data security and protection protocols and supporting processes defined at the (inter)national level for SMART. • Specific data security threats for the area/country). • Best data security and protection practices in the wider SMART community.
DDM 2.6	Set up field devices for collecting SMART data	• Installing the Configurable Data Model on devices used for data collection. • Installing and updating data collection applications (e.g., up to date SMART applications or other) on a device with a Configurable Model.	• Use and maintenance of the devices and software used for data collection.
DDM 2.7	Integrate new technologies for data collection into the SMART system	• Monitoring and evaluating usefulness / compatibility of new technology (software, hardware and data collection devices) with the SMART system. • Integrating new technologies in the SMART system as required. • Setting up new devices integrated in the SMART system.	• Sources of information on new technologies and their utility relevant to SMART.

DDM 2.8	Collate and manage data collected in the field	- Collecting devices to download and collate the data into the SMART database. - Entering field data into the database and ensuring it is backed up. - Conducting debriefings of field staff for relevant information about SMART use. - Conducting data validation to ensure that the data is accurate and has been correctly collected. - Processing, storing and backing up recorded data and images. - Running queries and reports to provide immediate feedback to data collectors and managers.	- Data transfer and storage. - Basic day to day maintenance and problem solving for frequently used SMART devices.
DDM 2.9	Enable two-way flow of SMART related data and information between managers and field staff	- Ensuring that data collected in the field is made available to relevant managers and other personnel in accessible formats. - Ensuring quality of the data through debriefing sessions. - Building and adapting data collection sequences and reports based on needs of data collectors and decision makers in the form of reports and analytics.	- Data analysis methods. - Data visualization and communication skills. - Techniques for monitoring and evaluating Ensure data quality data quality.
DDM 2.10	Provide technical support to ensure functionality of the SMART system (hardware and software)	- Diagnosing problems and malfunctions, identifying and correcting errors: - in the SMART database. - on computers/field devices and other devices used for SMART. - Ensuring software and hardware are updated and maintained. - Working with users to ensure that equipment is correctly used and maintained.	- Extensive technical knowledge of hardware and software in use. - Testing and diagnosis of hardware and software problems. - Communication skills.
DDM 2.11	Proficiently operate and maintain information technology	- Using and managing databases, apps, spreadsheets, GIS and other commonly used applications. - Using local and online networks and servers. - Using online tools and services for data collection, sharing and management. - Solving common problems and conducting regular maintenance and updates (hardware and software). - Ensuring secure use of IT (virus checking, updating software, backups, etc.). - Using and maintaining peripherals (printers, scanners, plotters, etc.). - Using available platforms (PC, Mac, Tablet, Smartphone, etc.).	- Advanced computing principles and operation. - Uses of required software, hardware, applications, etc. - Use of relevant platforms (PC, Mac, Tablet, Smartphone, etc.). - Good practice for secure use.
DDM 2.12	Manage and maintain IT systems and networks	- Overseeing management and maintenance of IT systems and equipment. - Ensuring maintenance, upgrading, etc. of computers and peripherals. - Ensuring availability, registration and updating of software. - Ensuring correct functioning and operation of computer networks. - Developing standards and protocols for IT and network use. - Maintaining central servers. - Maintaining online/cloud data storage. - Ensuring data security (physical security of the infrastructure / equipment, virus checks, firewalls, back up, updates, etc.).	- IT system management and maintenance (hardware and software). - Network creation, management and maintenance. - Network security, maintenance and back up.

CATEGORY FDC

FIELD DATA COLLECTION

Planning and implementing collection of data for SMART

LEVEL 3: FIELD DATA COLLECTION

LEVEL CODE	OVERALL COMPETENCE FOR THE LEVEL		GENERAL SUPPORTING KNOWLEDGE FOR THE LEVEL
FDC 3	Direct planning and implementation of SMART data collection		- In depth technical expertise and experience in SMART use. - Familiarity with SMART terminology.
Code	Competence Statement <i>The individual should be able to:</i>	Details, scope and variations <i>A brief explanation of the competence.</i>	Main knowledge requirements for the competence
A	B	C	D
FDC 3.1	Direct the development of SMART Standard Operating Procedures for field data collection	- Developing and ensuring implementation of Standard Operating Procedures (SOPs) for SMART data collection, field surveys and monitoring related to relevant site management activities. - Upholding (inter)national SMART Standard Operating Procedures. - Consulting with field staff and stakeholders.	- Specific data requirements for the area. - Methods for developing SOPs relevant to the needs of SMART and the area.
FDC 3.2	Direct the planning and integration of SMART data collection into field operations	Based on agreed uses of SMART and SOPs (See FDC 3.1). - Developing/adapting work plans to allow effective use of SMART by field personnel. - Ensuring personnel and supervisors have the required training and competences. - Ensuring personnel have the required equipment. - Monitoring and guiding performance of personnel.	- Goals, objectives and required outputs of SMART. - Structured approaches to work planning. - Personnel procedures of the area.
FDC 3.3	Ensure compliance with data protection and information security protocols and practices	- Ensuring personnel and supervisors have the required training on data protection and information security. - Ensuring required security of information collected in the field and entered into SMART. - Ensuring security of collection devices, equipment, stores and operations rooms. - Upholding user levels/access rights for the SMART system.	- Relevant data security and protection laws and regulations. - Specific threats to data security and data protection for the conservation area. - Main options for data protection and security.

FDC 3.4	Ensure the flow of information between field personnel, SMART operators and managers	- Ensuring that data collected in the field is correctly transferred to the SMART system. - Ensuring establishment of debriefing protocols and that debriefing sessions are included in field personnel work plans. - Ensuring that feedback from personnel on field data collection methods, SOPs and equipment is provided to SMART system operators and managers. - Ensuring that the results and analyses from SMART are fed back to field personnel. - Ensuring that operational strategies and plans are adapted as necessary based on the results and analyses from SMART.	- Internal communication and reporting systems of the organization. - Knowledge of the data collection and management system established for SMART.
FDC 3.5	Work with local communities to use SMART to provide evidence that supports their livelihoods, rights and interests	- Working with local communities to identify concerns and needs that could be addressed using SMART. - Supporting local communities by incorporating relevant indicators into the SMART system and collecting data of community interest. - Supporting community data collection compatible with the SMART system. - Providing training, support and advice for local communities to collect data using the SMART system. - Planning joint data collection events/patrols for PA personnel and local community members. - Ensuring that communities receive and provide feedback on the results of SMART data collection and analysis.	- Local community interests in resource use and law enforcement in and around the PA / CA. - Threats and issues affecting local communities. - Communication skills

LEVEL 2: FIELD DATA COLLECTION			
LEVEL CODE	OVERALL COMPETENCE FOR THE LEVEL		GENERAL SUPPORTING KNOWLEDGE FOR THE LEVEL
FDC 2	Plan and coordinate field data collection and support responsible personnel		• Use of SMART data collection hardware and software. Leadership & supervision. • Familiarity with SMART terminology.
Code	Competence Statement <i>The individual should be able to:</i>	Details, scope and variations <i>A brief explanation of the competence.</i>	Main knowledge requirements for the competence
A	B	C	D
FDC 2.1	Plan and lead practical field data collection using SMART	• Defining and adapting data collection/patrol targets, plans and operations using the SMART system. • Using the plans for data collection/patrol briefing and for defining mandates. • Planning all logistical aspects of data collection/patrols. • Ensuring all personnel are adequately trained in use of data collection methods, hardware and software. • Communicating data collection/patrol briefs and mandate to data collectors and collect relevant information from them.	• Goals, objectives and required outputs of SMART. • Equipment required for data collection. • Required data collection methods and data entry procedures. • Structured approaches to work planning. • Personnel procedures of the PA. • Field work, health and safety skills.
FDC 2.2	Lead and follow up on briefing and debriefing sessions with data collectors	• Following SMART debrief protocols relevant to the data collection approach. • Organizing briefing and debriefing sessions for data collectors. • Collating feedback and recommending modifications to data collection plans and activities. • Providing feedback to data collectors and motivating them to improve performance and optimise the quality of data collection and entry. • Monitoring progress towards patrol/data collection plans and targets.	• SMART debrief protocols. • Leadership and communication skills.
FDC 2.3	Lead data collection in the field	• Supervising field personnel to correctly collect and categorise data from the field (as required). • Supervising and supporting field personnel to correctly enter data into data collection devices or data collection forms. • Maintaining best practice for the conduct of field data collection according to plans and SOPs. • Ensuring that data collection is appropriately integrated with other work responsibilities (e.g., law enforcement, maintenance of safety and security).	• All aspects of field operations. • Leadership and communication skills. • Relevant data collection and data entry SOPs.
FDC 2.4	Collaborate in the field with other entities engaged in SMART field data collection	• Ensuring, where possible, collaboration with other entities and groups engaged in field data collection in the area (e.g., neighbouring conservation areas, forestry, game management or water management agencies). • Providing and exchanging practical advice and experience. • Promoting compatible use of SMART with other groups (e.g., through use of common data collection protocols, joint field data collection activities etc.).	• Range of local stakeholders and partners using SMART. • Communication and partnership building skills.

LEVEL 1: FIELD DATA COLLECTION			
LEVEL CODE	OVERALL COMPETENCE FOR THE LEVEL		GENERAL SUPPORTING KNOWLEDGE FOR THE LEVEL
FDC 1	Collect information from the field for the SMART system		Field work skills.
Code	Competence Statement <i>The individual should be able to:</i>	Details, scope and variations <i>A brief explanation of the competence.</i>	Main knowledge requirements for the competence
A	B	C	D
FDC 1.1	Correctly identify and classify observations required for entry into the SMART system	- Refers to (as relevant): - Ecosystems, habitats, species and their signs. - Signs indicating threats or problems (e.g., sick animals, dying vegetation). - Signs of illegal/unauthorised activity. - Directly observed incidents of illegal/unauthorised activity. - Uses and impacts (positive or negative) of the use of natural resources and public uses on the site. - Making and recording accurate observations with required additional information. - Checking and validating observations with other observers. - Knowing which observations require entry into the SMART system.	- Key species and ecosystems in the area. - Main threats to the biodiversity of the area, their signs and impacts. - Signs of illegal activity. - Species targeted by poachers. - Other features relevant to the data collection plans and protocols. - Observation skills.
FDC 1.2	Correctly enter data/information into devices configured for SMART data collection	- Understanding the structure of the data model/data entry framework installed on the collection device. - Entering data/observations correctly and accurately and reliably as required into the device provided. - Checking and correcting data entry errors. - Caring for SMART data collecting devices.	Use of the data entry device and required procedures.
FDC 1.3	Correctly enter data/information into manual data collection templates/systems	- Understand the basic structure of the data entry template. - Entering data/observations correctly and accurately as required. - Maintaining and protecting data sheets/ notebooks.	Use of the data entry system and required procedures.

FDC 1.4	Navigate and orientate correctly in the field using map, compass and GPS	• Using map and compass / charts for orientation and navigation. • Understanding the basic principles of GPS and the system used at the site. • Using GPS in the field for basic functions (orientation, tracking, recording waypoints, location etc.). • Setting up GPS and downloading/uploading routes and waypoints, etc. • Caring for and maintaining GPS units.	• Map, compass and navigation skills. • Principles of GPS. • Care and maintenance of GPS units.
FDC 1.5	Communicate and collaborate effectively with co-workers for effective data collection using SMART	• Communicating effectively with others during patrols and data collection activities to ensure accurate and comprehensive data collection. • Collaborating to confirm information and solve problems. • Sharing skills and knowledge with co-workers.	• Basic communication techniques and their uses, advantages and disadvantages.
FDC 1.6	Ensure that data collected in the field is correctly submitted	• Submitting data according to the required system • Handing in devices as directed. • Correctly uploading data from devices into the SMART system. • Accurately transferring manual records to the SMART system.	• Protocols for data submission.
FDC 1.7	Contribute actively to formal debriefings	• Providing information and feedback as required during formal debriefings. • Responding to questions and contributing to discussions.	• Communication skills.
FDC 1.8	Contribute to the development, improvement of the SMART system and its output.	• Providing feedback to supervisors informally and at debriefings on: · data models, sequences, procedures. · difficulties experienced or problems that occurred during data collection. · insights based on experience that may be used to improve the data model and the collection of data for SMART. · suggestions for adaptive management based on the results from the SMART system.	• Communication skills.

CATEGORY ARA

ANALYSIS, REPORTING AND ADAPTIVE MANAGEMENT

Analysing and reporting on SMART outputs and using the results to adapt and improve management

ARA LEVEL 4

LEVEL 4: ANALYSIS, REPORTING AND ADAPTIVE MANAGEMENT

LEVEL CODE	OVERALL COMPETENCE FOR THE LEVEL		GENERAL SUPPORTING KNOWLEDGE FOR THE LEVEL
ARA 4	Integrate SMART into high-level reporting, policy development, management and resource allocation.		• Overall knowledge of SMART • Principles and practices of high-level policy, planning and management.
Code	Competence Statement <i>The individual should be able to:</i>	Details, scope and variations <i>A brief explanation of the competence.</i>	Main knowledge requirements for the competence
A	B	C	D
ARA 4.1	Coordinate integration of SMART results and analyses into national and international reporting.	• Directing the collation of high-level reports on use of SMART and associated results and analyses (at national, regional or sectoral levels). • Directing integration of SMART results and analyses into existing reporting programmes (e.g., to conventions, agreements, international bodies etc.). • Coordinating integration of SMART results into national / international reports of other sectors. • Promoting use of SMART results and analyses for presentation for conferences and other events. • Ensuring the dissemination of reports at the national/government level.	• Reporting and information sharing requirements and formats. • Methods of information synthesis and prioritization. • Information research (sources of information, online searches, information requests, etc.).
ARA 4.2	Promote and coordinate integration of SMART results and analyses into high level planning and policy making.	May apply to national, regional, global and sectoral levels. • Integrating SMART analyses and recommendations into high level policy making, strategies and planning. • Using SMART analyses and recommendations to inform and support high level adaptive management and decision making.	• Relevant laws, policies and strategies.
ARA 4.3	Use SMART results to support budget and resource requests.	• Using SMART data as evidence to support investment in management and resourcing on the basis of needs and management impact.	• Budgeting and resource allocation systems.
ARA 4.4	Promote organisational/sectoral adoption of adaptive management.	• Building adaptive management approaches and systems into organisational practice at all levels. • Updating cycles of planning, reporting, management and adaptation to make use of SMART.	• Principles and practices of adaptive management.

LEVEL 3: ANALYSIS, REPORTING AND ADAPTIVE MANAGEMENT			
LEVEL CODE	OVERALL COMPETENCE FOR THE LEVEL		GENERAL SUPPORTING KNOWLEDGE FOR THE LEVEL
ARA 3	Use SMART to document, assess, adapt and improve area level management		• Area management principles and practices. • Uses and potential of the SMART system. • Familiarity with SMART terminology.
Code	Competence Statement <i>The individual should be able to:</i>	Details, scope and variations <i>A brief explanation of the competence.</i>	Main knowledge requirements for the competence
A	B	C	D
ARA 3.1	Establish formal SMART reporting systems and cycles	• Establishing cycles, systems and formats for formal reporting on SMART at all levels of use in an organisation. • Establishing regular reporting on SMART to higher levels (central authorities, sectoral bodies, donors etc.).	• Area management goals, objectives, monitoring and reporting systems. • Official reporting systems and cycles. • SMART query and reporting capabilities.
ARA 3.2	Specify requests for information, summaries and analyses using SMART data	• Specifying requirements and parameters for information, summaries and analyses from the SMART system (in relation to the objectives, activities and monitoring indicators for the area). • Working with technical staff to generate and refine queries.	• Data stored on the area SMART system. • Potential of SMART for generating queries, summaries and analyses. • Area management goals, objectives, monitoring and reporting systems.
ARA 3.3	Direct reviews and analyses of SMART outputs to inform and support management	• Leading regular analyses reviews of SMART outputs to assess progress towards management goals and targets and threat reduction objectives. • Ensuring inputs to analyses from all levels of user/data collector and from partners and stakeholders. • Interpreting SMART outputs, considering: • Possible causes of trends/changes. • Options for testing/verifying possible causes. • Options for adaptation of management policies and practice. • Gathering documented evidence and consulting expertise to help identify and evaluate management options.	• Facilitation skills. • Data interpretation and analysis skills. • Principles and practice of adaptive management and evidence-based approaches. • Technical knowledge of potential options for area management and threat reduction. • Open Standards for the Practice of Conservation.
ARA 3.4	Direct the integration of adaptive management recommendations into planning, management and operations	• Establishing/modifying planning and management processes and cycles to reflect SMART outputs, analyses and recommendations. • Working with personnel and partners to update and adapt plans, operations, monitoring and data collection as required. • Updating the SMART system to reflect revisions to plans and operations. • Adapting resource allocation and deployment to reflect revisions to plans and operations. • Leading the establishment of adaptive management approaches across the organisation. • Developing recommendations for higher level responses to the results of site management.	• Strategic planning tools and procedures (e.g., Theory of Change) linked to the goals and objectives in the management plan. • Principles and practices of adaptive management and application of the SMART Adaptive Management Steps. • Open Standards for the Practice of Conservation.

LEVEL 2: ANALYSIS, REPORTING AND ADAPTIVE MANAGEMENT			
LEVEL CODE	OVERALL COMPETENCE FOR THE LEVEL		GENERAL SUPPORTING KNOWLEDGE FOR THE LEVEL
ARA 2	Analyse and report on SMART outputs and operationalise adaptive management		• SMART functions and operation. • Area operational management. • Smart terminology.
Code	Competence Statement <i>The individual should be able to:</i>	Details, scope and variations <i>A brief explanation of the competence.</i>	Main knowledge requirements for the competence
A	B	C	D
ARA 2.1	Use SMART to analyse data collected on the field	• Designing standard and one-off queries and analyses with input from management. • Comparing results with targets, objectives, assessments, predictions and assumptions. • Exporting results to required formats for analysis and interpretation. • Leading discussions and team reviews of results of queries and analyses. • Identifying and highlighting key issues arising from queries and analyses (e.g., trends, anomalies, changes, comparisons with targets and forecasts).	• Data stored on the area SMART system. • Potential of SMART for generating queries, summaries and analyses. • Methods for generating SMART queries. • Data presentation methods.
ARA 2.2	Develop and present reports based on SMART outputs	• Generating (as required) SMART planning reports, weekly, monthly and annual observation reports using predefined report templates. • Designing reports and formats for specific purposes. • Adapting reports and data presentations according to different audiences. • Creating visual materials and presentations to present data and results. • Communicating effectively in writing. • Making effective verbal/audio visual presentations.	• SMART reporting formats and site / national level reporting requirements. • Analytical skills. • Techniques for clear writing and presentation of information.
ARA 2.3	Formulate recommendations for adapting management operations using results of SMART analyses	• Contributing to formal reviews (see ARA 3.3). • Preparing and proposing evidence-based adjustments to: • Data collection targets, methods and protocols. • Plans, processes, SOPs, operations etc. • SMART data models, queries, standard reports etc.	• Analysis and evaluation methods.

ARA 2.4	Revise and operationalise work plans based on adaptive management decisions	- Implementing adaptive management decisions according to agreed changes (see ARA 3.4) through adjusting: - Targets and other performance measures. - Field data collection plans and methods. - Operational work plans, patrol plans etc. - Allocation of operational resources. - Communicating and integrating changes with partners and stakeholders.	- Planning and management systems of the area. - Operational site management.
ARA 2.5	Update the SMART system based on adaptive management decisions	- Adjusting SMART data models, queries, standard reports etc. - Ensuring that the SMART system and collection devices are modified as required.	Good knowledge of SMART functionalities and setup procedures.

ANNEXE 1. LIST OF HIGHLY RELEVANT COMPETENCES FROM THE GLOBAL REGISTER OF COMPETENCES FOR PROTECTED AREA PRACTITIONERS

The table below presents the overall competence statements by competence categories and personnel levels, as defined in the Protected Area Competence Register. **The elements of the competence register considered highly relevant for the effective use of SMART are highlighted in bold characters in light yellow in the table below.** Users of the SMART Competence Register are encouraged to review the specific competences listed for the highlighted levels and categories to identify those that are relevant for the specific context of SMART users where they are operating.

A. PLANNING, MANAGEMENT AND ADMINISTRATION	Ensuring effective, efficient and equitable governance and management	General competence statements for each level and category			
		Level 4 EXECUTIVE	Level 3 SENIOR MANAGER	LEVEL 2 MIDDLE MANAGER, TECHNICAL SPECIALIST	LEVEL 1 general competences SKILLED WORKER
CATEGORY	OVERALL FUNCTION	The individual should be able to.....			
PPP Protected area policy, planning and projects	Providing a strategic and rationally planned framework for protected area governance and management.	Enable the establishment and integration of a protected area system within national and international policies and plans.	Direct development and implementation of strategies, plans and projects for achieving protected area goals.		
ORG Organisational leadership and development	Establishing and sustaining well-governed, managed and led organisations for protected area management.	Enable establishment of structures and systems for effective and appropriate protected area system governance and management.	Provide strategic and effective direction, leadership and management of a protected area.		
HRM Human resource management	Establishing an adequate, competent, well-managed and supported work force for protected areas.	Enable protected area system-wide availability of a protected areas work force that is sufficient in number, competent, adequately resourced and supported.	Ensure that protected area personnel are competent, well-organised, managed, led and motivated.	Lead and support teams and individuals conducting protected area work.	Supervise and instruct small work teams to complete specific tasks.

FRM Financial and operational resources management	Ensuring that protected areas are adequately financed and resourced, and that resources are effectively and efficiently deployed and used.	Enable availability of adequate physical and financial resources across a protected area system, and ensure their effective and efficient use.	Identify and secure adequate financial and physical resources for management of a protected area and ensure their efficient use.	Manage, monitor and account for the use of financial and other resources required for managing a protected area.	Account for money and resources provided for specific activities.
ADR Administrative documentation and reporting	Establishing and implementing procedures for information management, documentation and reporting.	Enable establishment of comprehensive systems for administrative monitoring, reporting and documentation across a protected area system.	Ensure that a comprehensive system of administrative documentation and reporting is in place for a protected area.	Prepare and manage accurate documentation of management activities according to required procedures.	Keep basic records activities as required by the organisation.
CAC Communication and collaboration	Building and using the skills required to communicate and collaborate effectively.	Communicate effectively in high level interactions.	Maintain effective communications by and within a protected area organisation.	Use formal and informal means for communicating with others using appropriate techniques and media.	Communicate effectively with co-workers, stakeholders and visitors.
B. APPLIED PROTECTED AREA MANAGEMENT	Applying specialist technical skills to protected area management	General competence statements for each level and category			
		Level 4 EXECUTIVE	Level 3 SENIOR MANAGER	LEVEL 2 MIDDLE MANAGER, TECHNICAL SPECIALIST	LEVEL 1 general competences SKILLED WORKER
CATEGORY	OVERALL FUNCTION	The individual should be able to.....			
BIO Biodiversity conservation	Ensuring the maintenance of the ecological values of protected areas through management and monitoring of species, their habitats, ecosystems and natural resource use.	Ensure that a protected area system contributes significantly to national and international goals and priorities for biodiversity conservation.	Direct the development and implementation of programmes that address conservation targets and priorities.	Plan, manage and monitor measures for achieving conservation targets.	Conduct supervised field activities to implement biodiversity monitoring and conservation programmes.

LAR Upholding laws and regulations	Ensuring that laws, regulations, and rights affecting protected areas and biodiversity are upheld.	Promote establishment of a sound policy and legal framework for reducing illegal activities that threaten biodiversity and protected areas.	Direct the development and implementation of programmes for crime prevention, law enforcement and compliance.	Plan, manage and monitor activities for protected area crime prevention, law enforcement and compliance.	Conduct supervised prevention, enforcement and compliance activities.
COM Local communities and cultures	Establishing systems of protected area governance and management that address the needs and rights of local communities.	Ensure system-wide recognition of community rights and needs, and enable community participation in protected area governance and management.	Direct the development and implementation of programmes that integrate protected area management objectives with the rights and needs of local communities.	Collaborate with local communities to implement activities that address the needs of people and the functions of a protected area.	Engage appropriately with local communities.
TRP Tourism, recreation and public use	Providing environmentally and economically sustainable tourism and recreation opportunities in and around protected areas.	Enable system-wide provision of opportunities for environmentally and economically sustainable tourism and recreation	Direct development and implementation of programmes for sustainable tourism and recreation appropriate to a protected area.	Plan, manage and monitor programmes, activities and services for visitors to a protected area.	Guide, assist and supervise protected area visitors and recreational activities.
AWA Awareness and education	Ensuring that local stakeholders, visitors, decision makers and the wider public are aware of protected areas, their purpose and values, and how they are governed and managed.	Promote national and international awareness of a protected area system, its purpose and values.	Direct development and implementation of an awareness strategy for a protected area.	Plan, manage and monitor delivery of awareness and educational activities using appropriate methods and media.	Conduct interpersonal awareness activities.
FLD Field/watercraft and site maintenance	Conducting field work and site maintenance tasks correctly, safely and securely			Plan, manage and monitor field-based activities.	Conduct field-based activities safely and securely.
TEC Technology	Using technology to support protected area management.			Adapt and make use of available and appropriate technology to support work programmes.	Use basic technological aids to support protected area work.

C. GENERAL PERSONAL COMPETENCES	Demonstrating the personal skills and behaviours required for working in a protected area.	General competence statements for each level and category			
		Level 4 EXECUTIVE	Level 3 SENIOR MANAGER	LEVEL 2 MIDDLE MANAGER, TECHNICAL SPECIALIST	LEVEL 1 general competences SKILLED WORKER
CATEGORY	OVERALL FUNCTION	The individual should be able to.....			
FPC Foundation personal competences		Demonstrate fundamental personal skills and behaviours required for day to day protected area work. (Applies to all levels).			
APC Advanced personal competences		Demonstrate personal skills and behaviours required for effective performance and leadership. (May apply to all levels; more likely to apply to levels 2-4).			

ANNEXE 2. GLOSSARY OF SMART TERMINOLOGY

Active	In SMART Field Sensors, refers to a station/location that has a functioning sensor deployed within it. Also refers to assets themselves that are deployed and functioning at a location.
Agency	Capacity development commonly refers to the overall process of creating and building capacities and their (subsequent) use, management and retention. Capacity building more commonly refers to the specific processes and activities that create capacities (adapted from United Nations Development Programme).
Aggregation	The total or sum of a number of collected data
Area boundary	The spatial boundary of your SMART Conservation Area
Association	The linkage formed between objects in a database.
Attribute	A feature or characteristic used to describe something.
Attribute value	A specific quantity or quality assigned to an attribute.
Basemap	The main SMART map that provides a user with spatial context for their Conservation Area, including essential boundaries and other spatial data relevant to conservation efforts. Users can add relevant information to a basemap by overlaying other information on top of it.
Cardinality	Refers to the direction of a relationship between two objects in a database where the relationship is not equal.
Configurable model	The version of the data model that is used with the handheld data collection device
Conservation Area	The focal area (e.g., protected area) the user works with within a single SMART database. SMART can manage multiple Conservation Areas in a single SMART database.
Coordinate reference system	Describes a coordinate-based local, regional or global system used to uniquely locate geographical entities in relation to a specific point. It defines a specific map projection, as well as transformations between different spatial reference systems.
Cross-conservation area analysis	A SMART process which allows administrator-level users to design, run and export queries and reports, across multiple conservation areas.
CyberTracker/SMART Mobile	External software application used for collecting data using a handheld device (e.g., smartphones, tablets, etc.).
Data model	The structure for collecting data at the site, including categories and attributes
Data origin	Where an entity or record has been created automatically in SMART Profiles through the use of a trigger, the database object will display a system generated attribute listing the source of the information and creating a navigable link in the database.
Data queue	Allows for external patrol, incident or mission data to be uploaded directly to the Connect Server, where the files will remain until a desktop user processes the files on their local machine. After the local processing, that user should then upload their changes back to the server, making the data available for other users.

Data type - Boolean	Attributes of this type accept a Boolean value, 'Yes' or 'No'. Boolean attribute fields can also be turned on or off using a checkbox if the user is unable to choose one of the two options.
Data type - date	Attributes of this type accept a date value in the format YYYY-MM-DD. The value can be input manually or selected from a calendar picker by the user. Date fields can also be turned on or off using a checkbox if the user does not have this information.
Data type - employee	Attributes of this type accept a selection from the list of employees that have been created for the current conservation area. The list includes all employees whether or not they have a SMART login.
Data type - list	Attributes of this type accept single or multiple selection from a list of values, which have been set in the data model.
Data type - numeric	Attributes of this type accept positive or negative number values up to fifteen significant digits. Larger values can be entered but are displayed using scientific notation (i.e., 3.23145E11 instead of 323145000000)
Data type - position	Attributes of this type accept location coordinates based on the coordinate reference system in use by the SMART Conservation Area. Coordinates can be either geographic or projected and can be entered manually or selected from the map.
Data Type - text	Attributes of this type accept all character inputs (letters, numbers and symbols within the language selection for the attribute up to a maximum limit of 1024 characters.
De-brief	To question or gain information from someone or a team of people that has just completed a mission/patrol.
Deployment	In SMART Field Sensors, refers to a set period of time during which a sensor is deployed at a location within a station, whether active or inactive.
Ecological records plugin	A tool for the capture, management, mapping and analysis of ecological monitoring data for conservation in protected areas.
Entity	Any fixed or moving (transient) specific features or 'things' for which data are collected in SMART.
Environment	Refers to specific circumstances, defined by the combination of physical terrain, ecological systems, climatic conditions, human cultures and legal structures, and their interactions across space and time, which a site or organization is subject to when operating at a specific location.
Error log	An automated log of SMART use and errors that should be generated by users along with bug reports.
Event	Something that happens or takes place, often of importance which is recorded in SMART.
Export a conservation area	Creating a zipped package of an existing Conservation Area in order to share it with another SMART user or back it up for secure storage.
Field sensor	A data collection device, typically automated and unmanned.
Fusion database	Refers to a database that combines raw and processed data from multiple sources into a single repository, which can be used to create analytical products and inform decision-makers.

Import a conservation area	To bring a single, previously established SMART Conservation Area that a user has exported into your SMART database.
Inactive	In SMART Field Sensors, refers to station/location without a functioning sensor deployed within it. Also refers to assets themselves that are: 1. not deployed or 2. deployed but not functioning.
Incident	An incident is a collection of observations that occur at the same point and same time (a waypoint).
Incident cut off	Time threshold for which multiple images being uploaded at once from the same source are identified as an independent incident and assigned a common incident group.
Independent incident	A location where observations are made that are not generated from a patrol.
Indicators	Refers to discrete data points, which suggest the existence of a larger process operating within the environment. Indicators, when combined with knowledge of the relevant process, help to predict intentions and outcomes.
Informant	A person who provides information.
Information fusion	Refers to the process of combining data from multiple sources into a single repository to obtain more complex, reliable, and accurate information.
Information requirements	Refers to the set of data points that must be collected and processing steps that must be carried out to answer questions that support decision-makers.
Information workflow	Refers to the processes that an individual data point, or collection of data points is subjected to in order to turn raw data into an intermediary or completed data product.
Intelligence	Information derived from interpretations about a set of observations recorded.
Location	In SMART Field Sensors, the specific point coordinates where a sensor is deployed. Locations also have a defined radius, delineating the area of sensor coverage. Several locations may be present within one station. Location is interchangeable with the term "unit location".
Metadata	A set of data which describes and gives information about other data.
Mission	The act of going out into the field to gather survey information within the SMART Ecological Records module. Generally, involve a group visiting one or more sampling units and making a collection of observations.
Multi-value attributes	Refers to a special characteristic of list attributes in SMART Profiles records that allows for the selection of multiple values within the attribute.
Network	A group of interconnected entities (people, things) and their relationships
Object	A conceptual representation of a real-world entity, event, or relationship within an object-oriented database.
Object type	A class of objects formed through the creation of a template specifying attributes, their structure and any behaviours affecting the attributes.

Observation	A single item observed consisting of exactly one category from the data model and all its associated attributes.
Open Standards	A widely adopted set of principles and practices that bring together common concepts, approaches, and terminology for conservation project design, management, and monitoring. See https://conservationstandards.org/
Ordinality	Describes whether a relationship is mandatory or optional within a data model design.
Parameters	A boundary or limit setting the range at which a process or activity is conducted.
Patrol	An activity performed to collect data in the field, organized in teams.
Patrol mandate	The purpose for a patrol going to the field.
Patrol plan	A defined set of targets that need to be achieved within a set timeframe.
Patrol team	A group of field staff who work together to conduct a patrol.
Patrol type	The mode of transport for a patrol.
Plugin	An add-on to the core SMART application that facilitates specific tasks or functions.
Profiles	SMART Profiles is a plugin designed to allow the secure storage, management, and analysis of information that is not typical of core SMART. It contains a suite of functionality to broaden the use of SMART itself: it was built to track individual entities in time and space, and to capture the relationships between entities.
Projection	The means in which a numerical figure can be represented in relation to the earth's surface
Queries - gridded	Results are displayed in a user specified grid (raster) format with aggregated results based on the defined grid size. Results are displayed in tables or on a map. Values computed can be either patrol related values (total distance, total number), data model related values (total number of observations, average age etc), or encounter rates (any of the above per distance, number of days etc.).
Queries - incidents	Used to display details of patrol incidents (waypoints). These queries display the incident records which meet the requirements of the filters. No summarizing takes place (i.e., no totals, amounts, aggregations, etc.). The resulting table includes all the patrol attributes associated with the incident as well as the incident location and time details. Observation details (data model categories and attributes) are not included in the results. Results can be viewed in a table or on a map.
Queries - observations	Used to display details of patrol observations. These queries display the observation records which meet the requirements of the query filters. No summarizing takes place (i.e., no totals, amounts, aggregations, etc.). The resulting table includes all the patrol attributes as well as all the data model category and attribute information associated with the observation. Results can be viewed in a table or on a map.
Queries - summary	A summary summarizes the raw data and allows for grouping into different categories. Summaries results can only be viewed in tables. Items that can be summarized include total patrol attributes (number of patrols, the total distance travelled, etc), and data model categories (total number of snare observations), and data model numeric attributes (total number of guns).

Query	A query displays raw records that are selected using filters. No summarizing (totals, etc.) is done. This allows users to view the raw patrol and observation data. Queries can be viewed in tables or on a map.
Rank	A position in the hierarchy of the agencies/organizations operating in a Conservation Area.
Relationship	The way that two or more entities are associated (linked, related, etc.) to one another and captures specific information about that association.
Report	An account given of data from a SMART Conservation Area, typically of things that rangers have observed, heard, done, or investigated, and generated at regular intervals (e.g., weekly, monthly, annually). SMART reports are highly configurable and allow for a wide range of standardized reporting.
Sampling unit	A transect or plot where observations are made one or more times within the SMART Ecological Records plugin.
Server	A computer or computer system which centralizes a service or resource.
Shapefile	A type of file containing geographical and spatial information usually displayed as a polygon, points or lines.
Source	Refers to a person from whom, or a thing from which, information can be obtained.
Source reporting	Refers to the raw unprocessed data that justifies the creation, alteration, or removal of structured data in the database.
Standard operating procedure (SOP)	A set of step-by-step instructions compiled by an organization to help workers carry out routine operations.
Station	A place from which a patrol starts and/ or ends.
Survey	A collection of survey missions in the SMART Ecological Records plugin that represent a single complete set of survey data (visiting all sampling units, making required observations).
Survey design	The template for survey data collection in the SMART Ecological Records plugin, including the survey properties, mission properties, and sampling unit definition, but not any data.
Tracking entity	An entity created in instances where information about a single event may be contained in many different reports. This allows multiple records to be collated into a single location, overcoming current limitations in the functionality of the software.
Trigger	Automatic process that occurs when a specific set of conditions are met, resulting in a specific action.
Upgrade/Restore a backup	Includes the survey properties, mission properties, and sampling unit definition, but not any data.
Validation	The action of checking or proving the accuracy of something's validity.
Web map server	A computer program that produces spatially referenced data on maps, dynamically.
Web map server tiles cache	A cached map service is like a regular map service but is enhanced to be downloaded and served as a static image. The tiles provide detail on different scale levels.

ANNEXE 3. SMART MANUALS AND OTHER USEFUL SUPPORT MATERIALS

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SMART manuals and guidance. An up to date set of downloadable resources is available at:

<https://smartconservationtools.org/support>

Global Register of Competences for Protected Area Practitioners.

<https://www.iucn.org/content/a-global-register-competences-protected-area-practitioners>

Open Standards for the Practice of Conservation.

<https://conservationstandards.org/>



Thomas Cristofolletti

ANNEXE 4. LIST OF WORKSHOP PARTICIPANTS AND INTERVIEWEES

NAME	ORGANIZATION	INTERVIEWED	WORKSHOP PARTICIPANT
Alexander Wyatt	WWF Cambodia	◆	◆
Anthony Dancer	Zoological Society of London	◆	◆
Armando Dans	Re:wild	◆	◆
Claire Lewis	Frankfurt Zoological Society	◆	
Clarine Kigoli	Zoological Society of London	◆	◆
Claudine Cloete	Southern African Wildlife College	◆	◆
Denton Joachim	Peace Parks Foundation	◆	◆
Diana Paredes	Wildlife Conservation Society Ecuador	◆	
Drew Cronin	North Carolina Zoo		◆
Elsabe van der Westhuizen	Frankfurt Zoological Society	◆	
Felipe Avino Spina	WWF Brazil	◆	◆
James Peter Lourens	WWF Cambodia	◆	
James Slade	Re:wild		◆
Jampel Lhendup	Department of Forest and Park Services, Bhutan	◆	
Marius Steyl	Limpopo National Park, Mozambique	◆	
Miguel Goncalves	National Administration of Conservation Areas, Brazil	◆	◆
Monica Harris	SMART Partnership		◆
Richard Bergl	North Carolina Zoo	◆	
Rob Pickles	Panthera	◆	◆
Rohit Singh	WWF US		◆
Ronet Santos	D'Aboville Foundation and Demo Farm Inc., Philippines	◆	◆
Rudolf Mremi	College of African Wildlife Management, Mweka, Tanzania	◆	
Rumbidzai Magwiro	Frankfurt Zoological Society	◆	
Shayne Kotting	Ministry of Environment, Forestry and Tourism, Namibia	◆	
Sybille Klenzendorf	WWF Germany	◆	◆
Thien Le Quoc	WWF Vietnam	◆	
Tony Lynam	Wildlife Conservation Society	◆	◆
Xia Stevens	Panthera	◆	◆
Mike Appleton	Re:wild (facilitator)		◆
Erika Stanciu	ProPark Foundation (facilitator)		◆

SMART Partners



The SMART Partnership is a group of global conservation agencies, conservation organizations, and individuals that share a mission to conserve biodiversity, reduce the impacts of illegal extraction and trade of natural resources, strengthen law enforcement related to biodiversity conservation and strengthen overall management of conservation areas.



SMART Values

- Freely available and open source
- Responds to needs and feedback from front-line users
- Scalable and customizable to a wide variety of locations and contexts
- Packaged with an extensive support and training network
- Commitment to long-term funding and support through the SMART Partnership



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