AFRICA-BB-MAPS DATA STANDARDISATION PACK

Africa-BB-Maps Data Standardisation Package: Overview and User Guide

A ten-minute introduction to the package and its four components

1 Purpose of the package

The Africa-BB-Maps project, implemented by ITU with European Union funding, is building national broadband mapping systems in eleven countries: Benin, Botswana, Burundi, Côte d'Ivoire, Ethiopia, Kenya, Malawi, Nigeria, Uganda, Zambia and Zimbabwe. Each system collects data on infrastructure, service coverage and investment from many operators and public bodies. Without common rules, each country and each contractor would model, name and store that data differently. Systems could not then be compared, maintained or connected.

The Data Standardisation Package sets those common rules. Every country applies the same data model, the same database structure and names, the same filing structure and the same implementation procedures. National differences are confined to recorded national settings and documented departures, held in each country's National Geospatial Database Implementation Plan. The package is written mainly for national regulatory authorities (NRAs) and their technical teams.

2 Package architecture

Component	Main question answered	Approved document(s)
Component 1: Foundation Data Model and Schema	What is the data?	Foundation Data Model and Schemas: Application Schema, Mobile Coverage Specification, Regulatory Implementation Plan, Investment Mapping Methodology, Demand Mapping Note, Data Standardisation Guidance
Component 2: Database Structure and Naming Conventions	How is the data organised and named in the database?	Geospatial Database Structure and Naming Convention Guidance (Volume 1)
Component 3: Filing Structure	Where are data and supporting documents stored?	Broadband Data and Documentation Filing Structure Convention Guidance (Volume 2)
Component 4: Physical Implementation Guide and Workbooks	How are the standards implemented on the platform?	Physical Database Implementation Guide (Volume 3); Main Domain Register and five domain workbooks; reference SQL (non-normative)

3 How the components work together

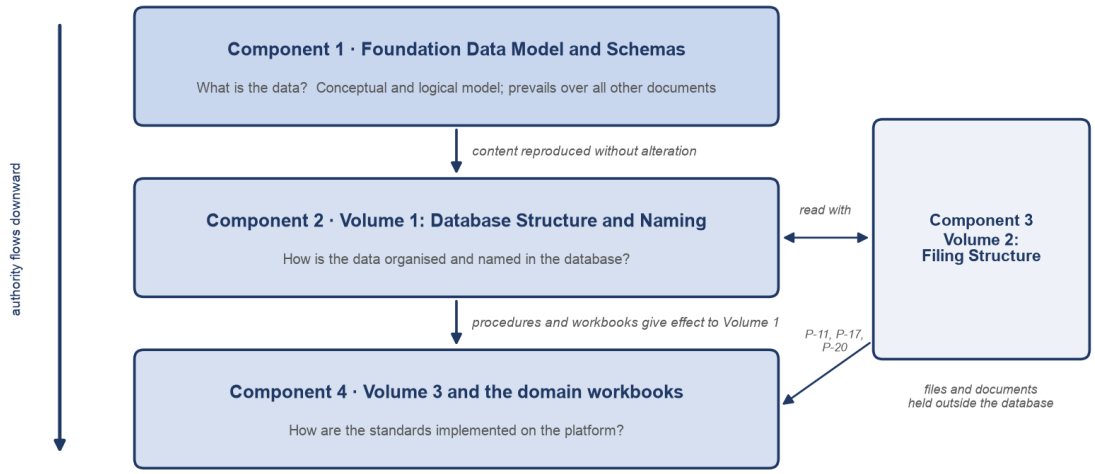

Figure 1 The four components. Content flows from the data model through database organisation to implementation; Volume 2 governs everything held outside the database.

- **Order of precedence.** Component 1 prevails on content, Volume 1 on names and database structure, and Volume 3 on procedure. A workbook establishes no requirement of its own (Volume 3, clauses 13.3 and 13.4).
- **Nothing is reinterpreted.** Volume 1 gives Component 1 objects physical names as aliases, and Volume 3 and the workbooks reproduce them. Where Component 1 sets no schema (Reference, Demand, Investment), Volume 1 sets a national structure and labels it as such.

- **Database and files are separate.** The Production database holds the authoritative record. Volume 2 governs files received, produced and issued around it, including the records each Volume 3 procedure produces.

4 How to use the package

Start here, then read the quick reference guide for each component you need (Guides 1 to 4 correspond to Components 1 to 4), and go to the full document when you need a precise requirement. The guides summarise; the full documents govern.

User	Read first	Then use	Typical questions answered
Project and programme managers	This overview; Guides 1 and 4	Volume 3, Chapters 4 and 12, and Appendix E; Regulatory Implementation Plan	What is delivered, in what order, and how is a deployment accepted?
NRA technical teams	Guide 1; Guide 3	Application Schema; Mobile Coverage Specification; Investment Methodology; Volume 2	What must operators submit, how is it validated, and where is it filed?
GIS specialists	Guides 1 and 2	Volume 1, Parts IV and V; domain workbooks (05, 06, 11)	Which feature class holds this data, what is it called, and in which CRS?
Database administrators	Guides 2 and 4	Volume 3, P-01 to P-10 and P-22; Main Domain Register (16, 17); reference SQL	How are instances, schemas, domains, keys and history built on our platform?
Implementing contractors	Guide 4, then Guides 2 and 1	Volume 3 in full; all workbooks; Appendices B, E and F	How do we generate, load, test and hand over a conformant database?

5 Implementation workflow

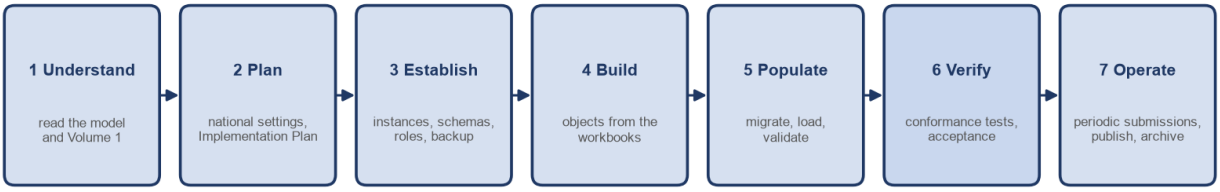

Figure 2 Recommended sequence for a national deployment.

Step	What happens	Governed by
1 Understand	Study the data model, the domains and the naming rules.	Component 1; Volume 1, Parts IV and V
2 Plan	Record the national settings, the platform family (Esri geodatabase or PostgreSQL/PostGIS), the roles and any departures in the Implementation Plan. Set up the filing structure.	Main Domain Register, sheet 17; Volume 1, Chapter 46; Volume 2, Annex VI
3 Establish	Create the six environment instances, the eight schemas, roles, storage and backup, and prove recovery.	Volume 3, P-01 to P-05
4 Build	Create the attribute domains, objects, core attributes, relationships and metadata catalogue, preferably generated from the workbooks.	Volume 3, P-06 to P-10, P-22
5 Populate	Inventory existing holdings, map and transform them, load into Working, validate and promote to Production.	Volume 3, P-11 to P-14, P-16
6 Verify	Run conformance tests T-01 to T-17, record every result and obtain written acceptance.	Volume 3, P-15, Chapters 11 and 12
7 Operate	Each reporting period: register submissions, validate, close the period, publish and archive.	Volume 3, P-17 to P-21, P-23; Volume 2

6 Expected outcome

- **Consistent database structure.** The same schemas, object names, keys and core attributes in all eleven countries, so that tools, scripts, training and support carry across.
- **Interoperability.** One storage CRS (EPSG:10592), one grid for mobile coverage, conceptual names preserved in exchange, and persistent identifiers that are unique across countries without central coordination.
- **Data quality.** Validation before anything becomes authoritative, ISO 19157 quality reporting, closed code lists enforced by the database and extensible lists checked at validation, and records that keep their history.

- **Maintainability.** Generated rather than hand-written objects, changes made once at source under change control, and a filing structure that survives changes of staff and contractors.

Companion documents. This overview and the four quick reference guides accompany Version 1.0 of the package and introduce no requirement of their own. Where a guide and a full document differ, the full document governs. Enquiries: africabbmaps@itu.int.