

# Digitalization of CRVS Systems

*Module 10: Civil Registration and Vital Statistics Digitalization  
CRVS eLearning course*

*Second South-East Asia Civil Registration Professionals Network Meeting  
Raffles Hotel Le Royal, Phnom Penh, Cambodia, 14-16 January 2025*



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January 14, 2025

# Objectives for Module 10

**By the end of this module, the learner will be able to:**

1. Explain the benefits of using IT for CRVS systems
2. Appreciate the importance of enterprise architecture and describe the key elements of CRVS systems
3. Identify the key requirements of a CRVS system
4. Explain the pros and cons of local hosting in a data center and hosting by commercial cloud providers
5. Understand some major decisions need to be made before procuring a software solution, such as stakeholder involvement, system ownership, and data ownership

# Module 10 is Presented in Six Lessons

Lesson 1: CRVS – The Big Picture

Lesson 2: Introduction to Enterprise Systems

Lesson 3: Elements of a CRVS System

Lesson 4: Defining Your CRVS Requirements

Lesson 5: Hosting the CRVS System

Lesson 6: Procuring a CRVS System

# Defining Your eCRVS Requirements

**Electronic CRVS systems should follow the Laws of the Jurisdiction**

# 1. Registration of Life Events

*Varies by country and multiple ministries/agencies involved*

## **Core set of life events:**

1. Registration of birth
2. Registration of death
3. Registration of marriage
4. Registration of divorce

## **Others:**

5. Registration of fetal death
6. Registration of child adoption
7. Registration of change in first name or family name
8. Registration of change in nationality
9. Registration of permanent/temporary residence

## 2. Certificates

Certificate for each life event should be reviewed and decided on what changes are required and template developed

## 3. Business Processes

Review existing processing for each life event and clearly outline the business processes involved/SOP – from notifications to printing of certificates.

## 4. Offline Operation and Internet Connectivity

**The system should be able to operate offline to some extent**

- **Basic offline functionality** allow user to avoid the need to re-enter data during short internet outage or to continue to enter data into forms and submit when the connection is restored.
- A **more advanced capability** allow a user to work offline while there is no internet connection and send to the central system when normal service resumes.
- The **most advanced capability** allow the user work in remote areas for days without internet connection, but this requires complete version of the system on a desktop computer/laptop. This could be difficult to develop and might not be necessary since most remote areas have some internet connection.

## 5. Hosting

**Hosting at a data center** or “on-premises” hosting is a physical place which houses the computing infrastructure running the CRVS System. There should be a primary data center and a disaster recovery site (located elsewhere).

**Hosting in the cloud** entails virtual data centers which can be provisioned or scaled up or down with just a few mouse clicks. Cloud hosting allows the flexibility to have multiple environments such as demo, User Acceptance Testing and production that are needed at various points in the development of the CRVS system. The cloud enables these environments to be turned on and off at will.



## 6. Security and Privacy

Security is handled through a combination of application packaging, infrastructure design, access controls and proof of identity checks to ensure only authorized people can see registry information.

- The privacy of each person registered in the system must be respected.
- Define user roles so users must only see what they are specifically allowed to see.
- Maintain detailed audit logs of all accesses to the system – functions and data
- All registry data (notifications, registrations, applications, etc.) must be stored as encrypted data

## 7. Public Portals

Allow customers to submit notifications and applications online and attach any required documents and also to make payments

## 8. Data Migration

Data migration is the process of converting any existing electronic data into a format that can be directly loaded/exported into the CRVS System.

## 9. Digitizing Paper Records

It can save storage costs and space, reduce retrieval time, increase security and protect against decay.

1. First scan all existing paper registration records
2. Index the images so the records can easily be searched in the CRVS system.

Indexing can be done either manually or using Optical Character Recognition (OCR) – can be comprehensive or just essential information such as name, sex, event date, recorded date, and folio reference

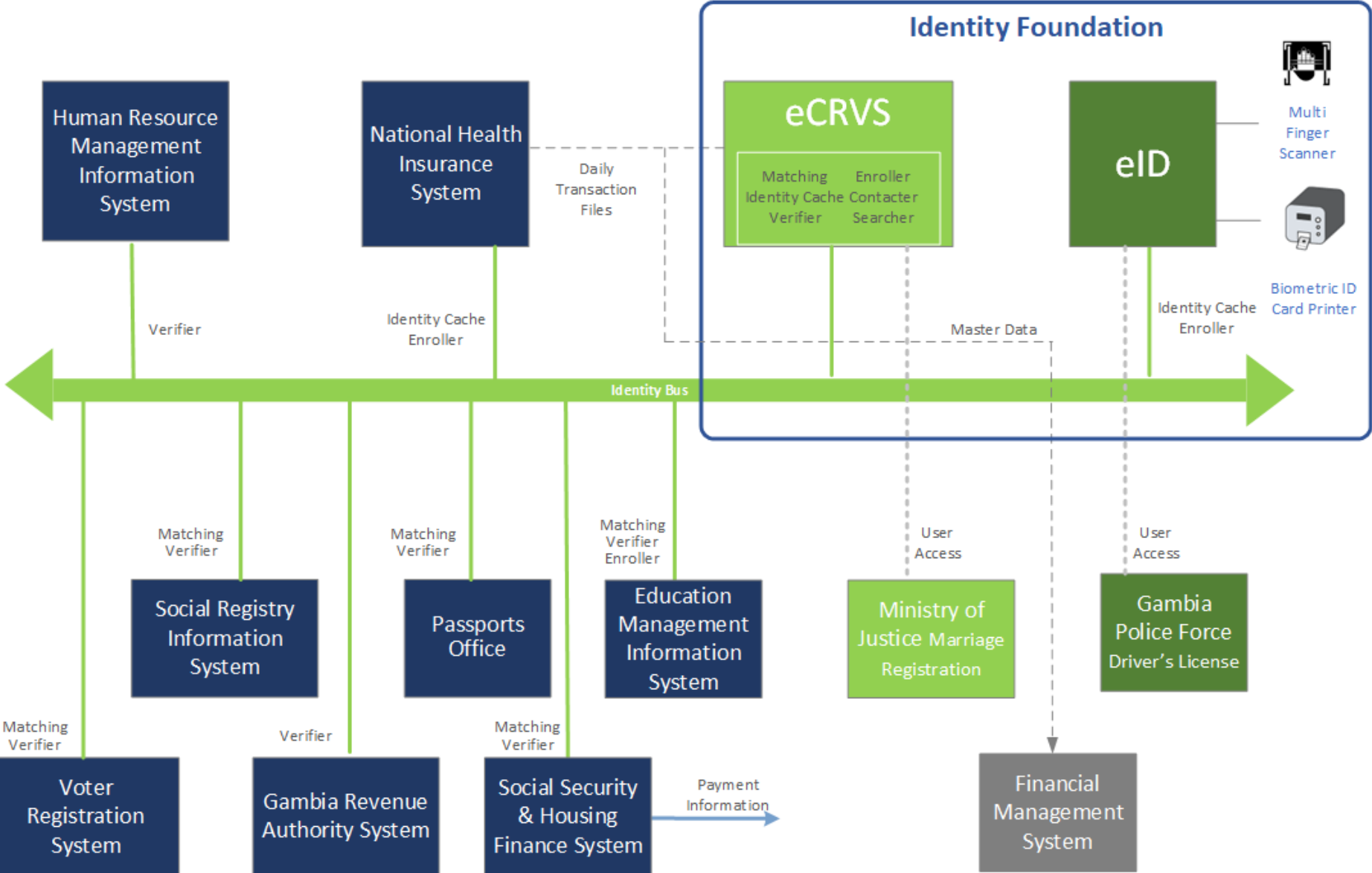
## 10. Interoperability

Decide on which other systems that the CRVS System will interface with.

All integrations should use a standard interoperability interface which should be clearly defined for the publishing system (CRVS) and the subscribing system (eg health, education, etc)

MOU may be necessary for each subscribing system regarding what data fields it will receive so security is guaranteed eg unique identification number, first name, last name, place of birth, date of birth etc

# Example for Interoperability for The Gambia



# 11. Foundation System for Identity

A functional eCRVS system is a foundation system for identity, which means that it provides the base from which the various identity related solutions can be built.

An eID system can leverage the CRVS system and hold the latest photos, biometrics, and contact information.

People will not need to provide their identity documents to register for each type of government service, since their identity can be verified with the CRVS system and get any demographic information that is appropriate.

## 12. User Devices

**Through multisectoral consultations**, develop a list of equipment, the required specifications, and estimated cost.

The **user devices could include** items such as desktop computers, laptops, tablets, printers for certificates, biometric card printers, document scanners, fingerprint scanners, webcam, webcam tripod, webcam led light, uninterruptible power supplies (UPS), smartcard readers, and white backdrop background for photography.

## 13. Payments

**Decide on the different payment types to be supported**

- Cash
- Bank Transfer
- Credit card
- QR Code Payments



# Key Resource Material Used

- APAI-CRVS. The Civil Registration and Vital Statistics Digitisation Guidebook. <http://www.crvs-dgb.org/en/>
- Experience developing CRVS systems in The Gambia and Lao PDR from wholly paper based CRVS

# Key Questions

**What is the current state of your country's CRVS system? Provide short description of country example for each of these categories**

<b>Fully Paper Based</b>	While there will be a lot of organizational changes and new things to learn you will be starting with a clean slate which can be good.
<b>Paper Based with Computerized Database</b>	There is a relatively simple computer system for registry staff (possibly primarily at head office) which has a database of the key life events.
<b>Out of Date Computer System</b>	There is a reasonably functional computer system but it is out of date, impossible to upgrade, doesn't integrate well with other systems, and doesn't provide any public portals to allow online application submission.
<b>Limited Computer System</b>	There is a computer system, but it isn't suitable for further development and needs to be replaced.
<b>Computer System with No Ownership</b>	There is system that was developed by external party but the country does not have no control over and no access to the data.
<b>Full-featured CRVS system</b>	CRVS system is fully developed and interoperable with other systems

# Key Questions

**Are there some key elements of CRVS system that is missing in the module?**

**Country examples of hosting – data center vs cloud?**

**Are you aware of any additional resource material that should be added?**

**Are the assignment and eDiscussion questions relevant?**



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Thank you

Questions & Comments

