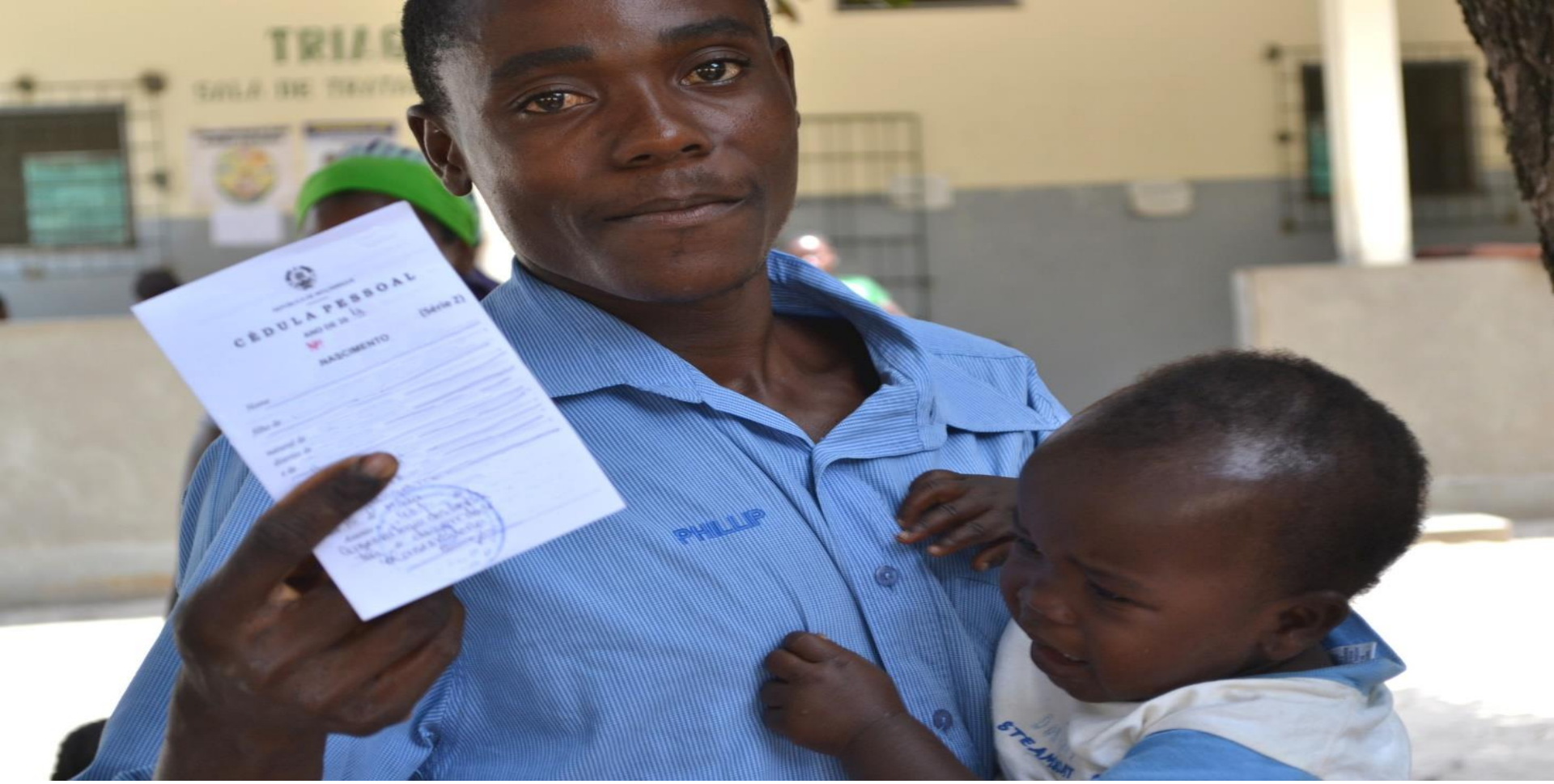

OpenCRVS

APAI CRVS
Making Everyone Visible
Africa Programme for Accelerated Improvement of Civil Registration and Vital Statistics

An open and standards based solution for CRVS

PLAN INTERNATIONAL

jembi health systems

Bloomberg Philanthropies

DATA FOR HEALTH INITIATIVE

Australian Aid

CRVS systems are not delivering on their promise to extend coverage, automate processes and share data:

- Under-investment in foundational registers
- Vendor lock-in and high maintenance costs
- Low accessibility in remote areas
- Poor interoperability with health / ID
- Systems “reinvent the wheel”
- Vital event silos
- Poor usability

OpenCRVS

A standards based, freely available CRVS platform, designed by and for civil registrars, promoting interoperability and a rights-based approach

Vision for OpenCRVS

Free No license costs and no ties to software vendors.

Standards-based Conforms to UN CRVS and ICT standards

Data enabled Leverages data for performance management, audit and tracking

Configurable Meets country specific needs & regulations

Interoperable With health, National ID and other eGov systems

Safe & Secure Data protection and confidentiality at the core of the design

Simple & Accessible Procedures designed for ease of use for Civil Registration staff and citizens

Respecting the…

Principles *for* Digital Development

OpenCRVS prototype

WORKING TOGETHER WITH CIVIL REGISTRARS, WE CREATED A REALISTIC USER JOURNEY (BASED ON GHANA CONTEXT):

- A birth is first recorded by a health worker at an **immunisation clinic**
- Data is shared with OpenCRVS using an **open health standard**
- A civil registration field officer is **automatically notified** of the birth and performs **active registration**, recognizing that it can be difficult to reach civil registration offices in remote areas
- The field officer performs a **remote declaration**, capturing supporting documentation on a **tablet**

OpenCRVS prototype

- Back in the civil registration office, **data validation**, **National ID checks and certification printing** is integrated into OpenCRVS
- The digital system **replaces the need for paper trails**, but has the option to work in tandem with it while regulations evolve
- Every system interaction is recorded. Operations managers can set targets at National, regional and district levels, enabling location based **performance management and case tracking**
- **Standard tabulations and micro-data** can be exported for statistical analysis and reporting at the NSO
- Admin users can **configure system features** based on country requirements


DEMO

Our Agile Methodology

We still have much to do:

- Registration of all vital events
- Capturing cause of death including integration of verbal autopsy
- Configuration settings to allow for a wide variety of country contexts
- National ID integration using open standards
- Multi-language support
- Mobile payments support
- Scanning and digitisation of paper forms / records
- Native Android application for offline working
- Interactive Voice Response for birth notifications
- …

Our Agile Methodology

An “Agile” approach allows us to continuously design, develop and test with citizens and registrars.

In this way, we can be **confident** that the solution and user experience will **perform well in the field**

WE ARE LOOKING FOR COUNTRY PARTNERS TO CO-CREATE THE 1ST RELEASE OF OPENCRVS, BY MID 2018.

Thank you

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OPEN-SOURCE APPROACH:

Having an open-source code base has the following key benefits:

- No license fees
- Flexibility to adapt the software for custom requirements
- Avoidance of vendor lock-in
- Procurement leverage due to a larger pool of software engineers
- Less pressure to constantly upgrade software

HEALTH INTEROPERABILITY APPROACH:

- Using IHE's MHD (mobile health documents) profile to submit a notification document to a FHIR server
- FHIR server acts as a Shared Health Record.
- The MHD profie is based on FHIR as a base standard and descibes a way of transmitting a clinical document around a particular context.
- This profile is planned to be part an upcoming OpenHIE specification release and is a simpler option to the standards currently specified in OpenHIE 1.0 spec.

SECURITY APPROACH:

For the development of OpenCRVS, nothing is held in higher regard than the personal data security of citizens.

Security features will be developed and maintained at many levels including:

- secure and encrypted communications
- authentication and authorisation at user and system level
- role based access
- database level security and encryption
- audit trail

SECURITY APPROACH (DETAILED):

- Dynamic JSON Web Token (JWT) secrets and database keys are generated on-demand, audited on a per-client basis, subject to a 1 hour time limit, recorded for audit and easily revoked.
- The OpenCRVS API will not accept any request without first a valid JWT being authenticated and transmitted with the request. Authentication returns a list of API “claims” that can be controlled by user role. This means that the architecture prohibits unauthenticated users of specific levels to perform tasks requiring greater security clearance.
- OpenCRVS is hosted entirely behind SSL/https and keys are automatically renewed by LetsEncrypt
- Server side validation protects against SQL injection attack. Personally identifiable information is encrypted in the database and structured. All encryption and database secret keys / leases will be managed by Hashicorp Vault. Access control policies provide strict control over who can access what secrets.
- Ideally OpenCRVS should be hosted on encrypted hard disks, and that the disk keys conform to the above management approach e.g. Hashicorp Vault.

Appendix 1: Data Integrity within the Foundational Identity Registers