**OpenEMIS Software Development Principals**

**1. Design with the User**

* Develop context-appropriate solutions informed by real user needs.
* Involve all user groups throughout planning, development, implementation, and evaluation.
* Use an incremental and iterative approach to development.
* Enhance existing workflows and plan for organizational change.
* Ensure inclusivity, particularly for marginalized populations: women, children, persons with disabilities, and those affected by conflict or disaster.

**2. Understand the Existing Ecosystem**

* Align solutions with existing technological, legal, and regulatory environments.
* Actively engage in networks and communities of like-minded practitioners.

**3. Design for Scale**

* Plan for scalability from the outset, identifying and addressing potential constraints.
* Apply systems thinking to understand broader implications beyond the immediate project.
* Ensure solutions are replicable and customizable for other countries and contexts.
* Validate impact before scaling.
* Evaluate technology choices through the lens of national and regional adoption.
* Engage potential partners early and build relationships that support long-term scaling.

**4. Build for Sustainability**

* Plan for long-term sustainability, including financial viability and total cost of ownership.
* Prioritize investment in local developers and communities.
* Collaborate with local governments to align with national strategies and identify champions.

**5. Be Data-Driven**

* Design with measurable impact in mind, focusing on outcomes over outputs.
* Address gaps in data and evidence through evaluation and innovation.
* Use real-time data to support decision-making at all levels.
* Where feasible, leverage data generated from user activity to inform improvements.

**6. Use Open Standards, Open Data, Open Source, and Open Innovation**

* Adopt and build on existing open standards.
* Make data and functionality accessible through well-documented APIs.
* Treat software as a public good.
* Default to open source, publishing code in public repositories and supporting active developer communities.

**7. Reuse and Improve**

* Adapt and enhance existing tools, platforms, and frameworks whenever possible.
* Develop modular, interoperable solutions rather than monolithic systems.

**8. Do No Harm**

* Identify and mitigate risks to users and their data.
* Design with privacy in mind, particularly for personally identifiable information (PII).
* Promote fairness and equity in collaboration and safeguard end-user interests.

**9. Be Collaborative**

* Involve diverse perspectives across disciplines and industries.
* Break down silos to foster coordinated, holistic approaches.
* Document and openly share processes, results, and best practices.

**10. Licensing**

* OpenEMIS software is freely available under the open source **Common Development and Distribution License (CDDL) Version 1.0 (January 2005)**.

**11. Architecture**

* OpenEMIS is designed as a modular, loosely coupled suite of interoperable tools for data capture, management, and analysis.
* Products can operate independently or as part of the broader OpenEMIS ecosystem, allowing ministries to adopt the components most relevant to their needs.

**12. Third Party Components**

* Continually update third party components using tools such as Composer to ensure that there are no security vulnerabilities

**13. Programming Languages**

* Utilize the following open-source programming languages for all OpenEMIS software applications: PHP for backend development and Angular for front end development
* The OpenEMIS Lab is committed to continuous upgrade of OpenEMIS software applications to supported versions of these programming languages

**14. Software Releases**

* Provide regular software updates and make them freely available from the OpenEMIS website.