



Hardening Open Source Software for Secure Environments

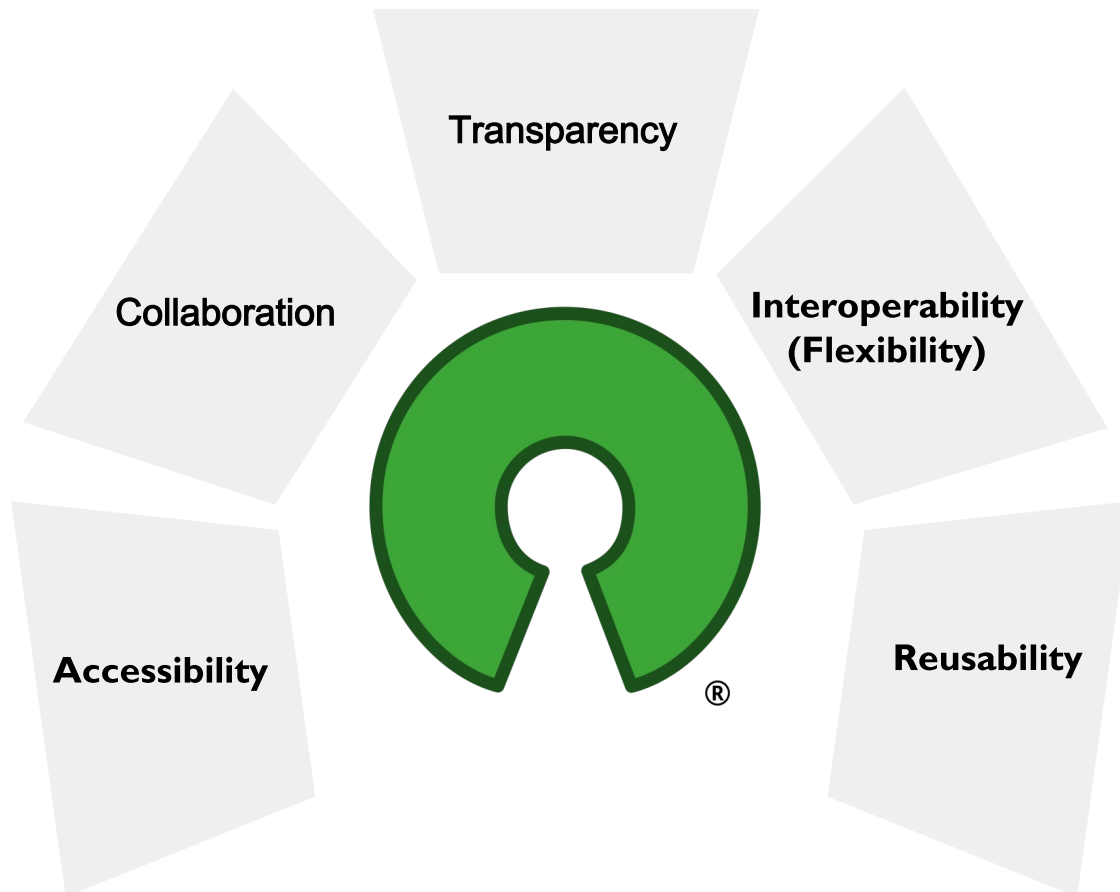
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USAID Data Services
EVIDENCE FOR DEVELOPMENT
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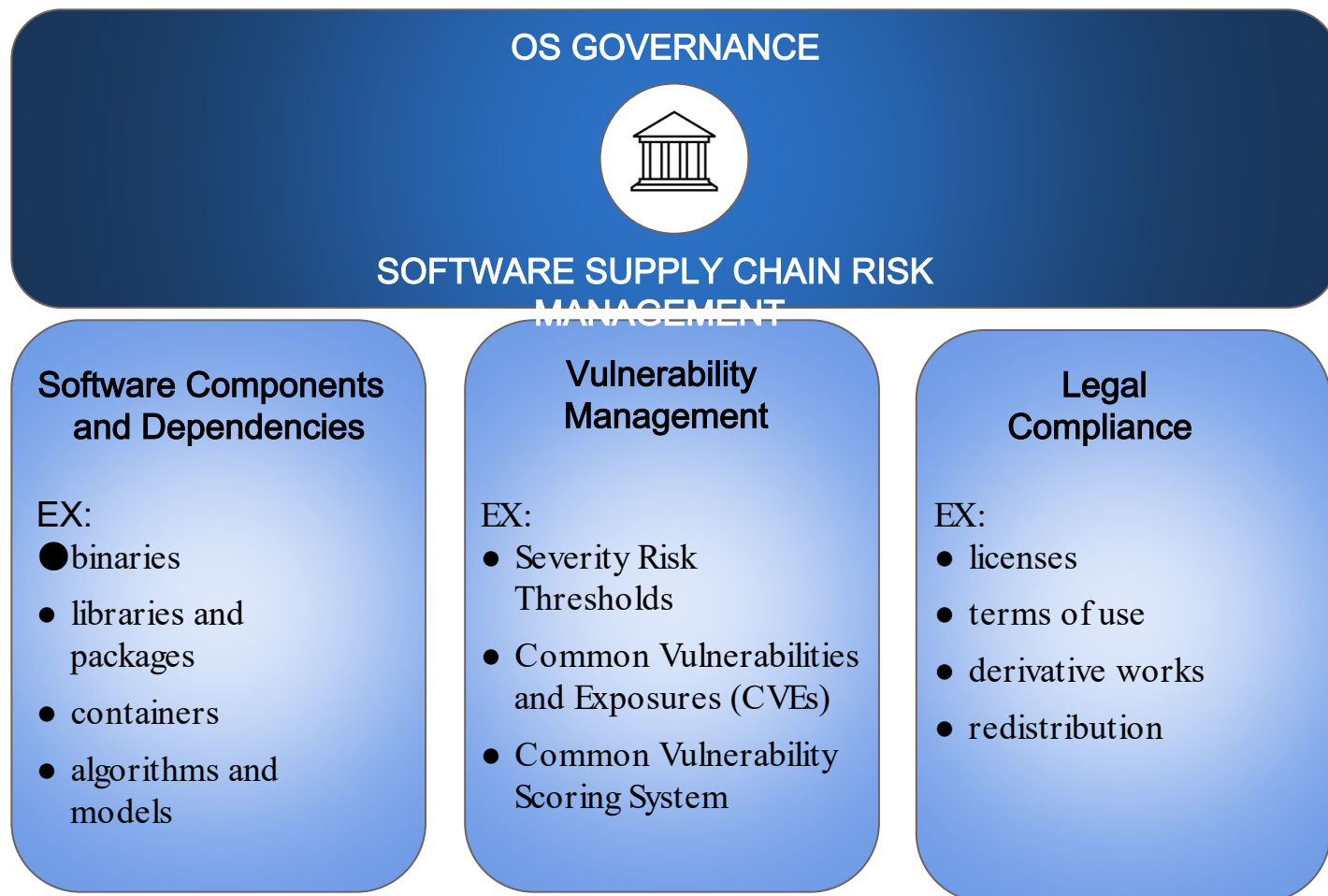
The Value Of Open Source Software (OSS): Why Use OSS in Secure Environments?

Federal agencies and other organizations operating secure environments should empower developers and data scientists to use the popular OSS that they use regularly in permissive environments. The use of OSS in secure environments and in workflows with protected data can bring the following benefits:



Open Source (OS) Governance for Hardening Software, Libraries and Packages

Federal agencies and other organizations must secure, or harden, OSS to use these components in secure environments and with protected data. OS governance and risk management are the keys to hardening open source software titles, libraries, packages, etc.

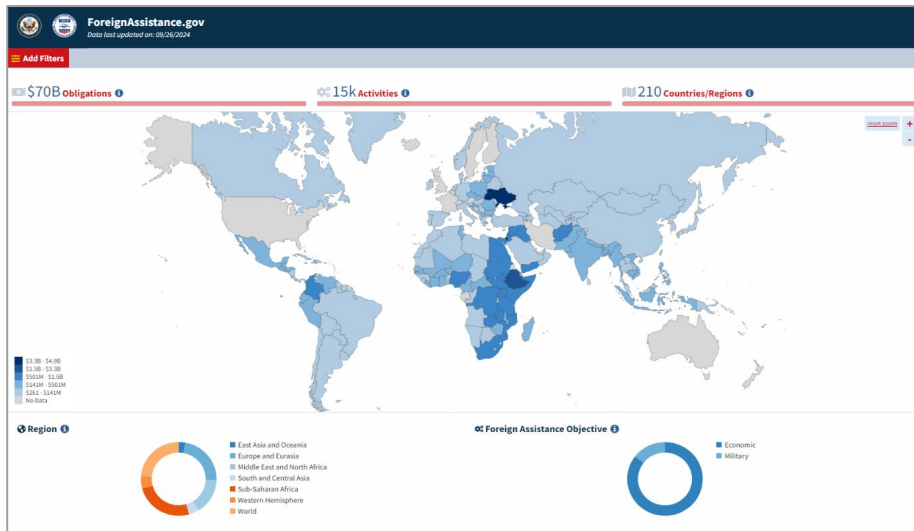


Use Case: USAID Evidence and Data Science

The U.S. Agency for International Development (USAID) leads the U.S. Government's international development and disaster assistance through partnerships and investments that save lives, reduce poverty, strengthen democratic governance, and help people emerge from humanitarian crises and progress beyond assistance.

USAID relies on evidence and data to deliver critical development programs and disaster assistance around the world.

ForeignAssistance.gov



USAID Country Roadmaps

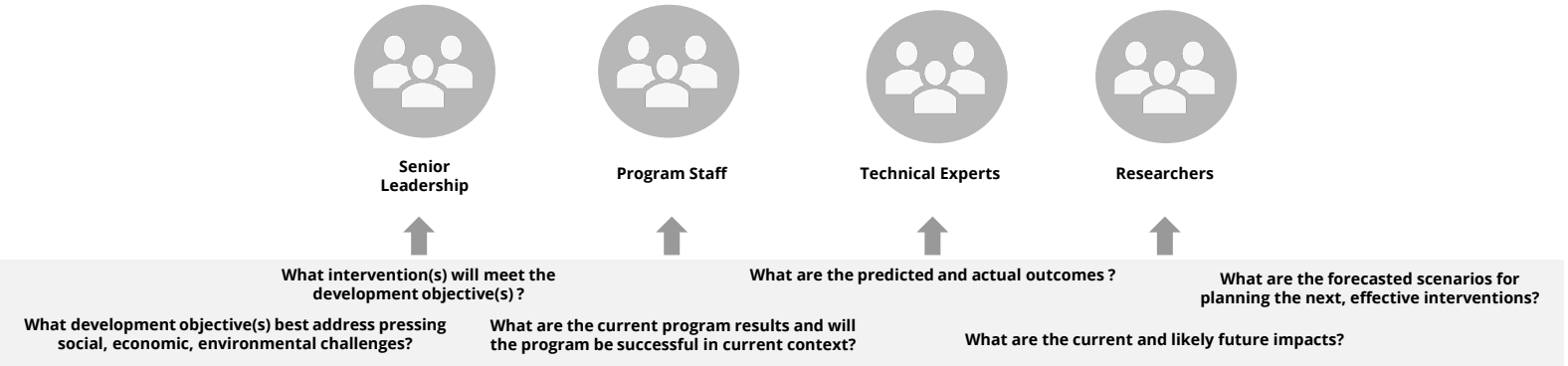


FA.gov is the U.S. Government's flagship resource for publishing budgetary and financial data produced by U.S. government agencies that manage foreign assistance portfolios. The Country Roadmaps are USAID's flagship analytical tool for assessing country development progress based on a curated set of 18 publicly available, third-party metrics

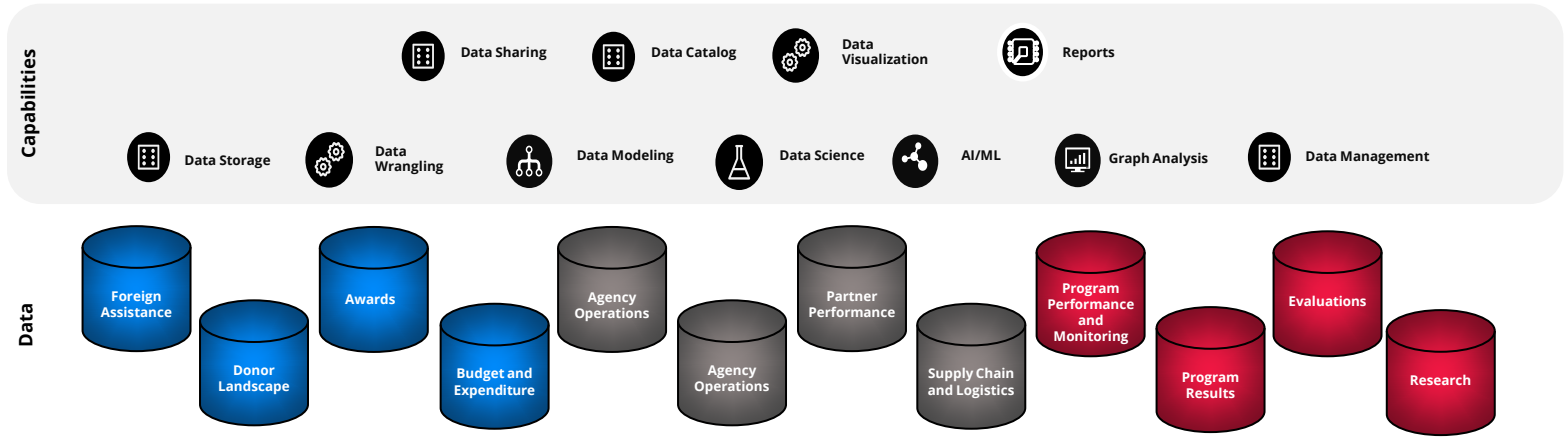
USAID IT Solutions for Data Science

USAID is developing agency-wide IT solutions that enable agency staff to transform data into evidence in support of USAID’s mission around the world. The Agency is using a data commons approach that can empower data scientists to perform advanced analytics on large amounts of heterogeneous data.

Development Data Commons (DDC)

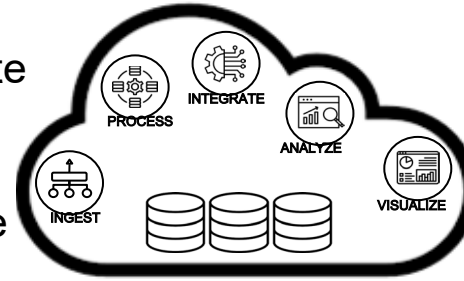


DATA COMMONS



USAID Data Science Foundations

USAID's data science program must accelerate data scientists' and data engineers' abilities to use modern data science practices, technologies, and tools in the Agency's secure IT environment. *Thus, the program must accelerate use of OS practices, technologies, and tools.*



EVIDENCE

ANALYTICS

SCRIPTS, MODELS,
ALGORITHMS

hardened data science scripts and source code

TOOLS

tools to manage access to and use of OS libraries and packages

IT INFRASTRUCTURE

technologies to manage risk associated with OS libraries and packages

DATA MANAGEMENT

DATA SCIENCE GOVERNANCE

governing risks associated with OS libraries and packages

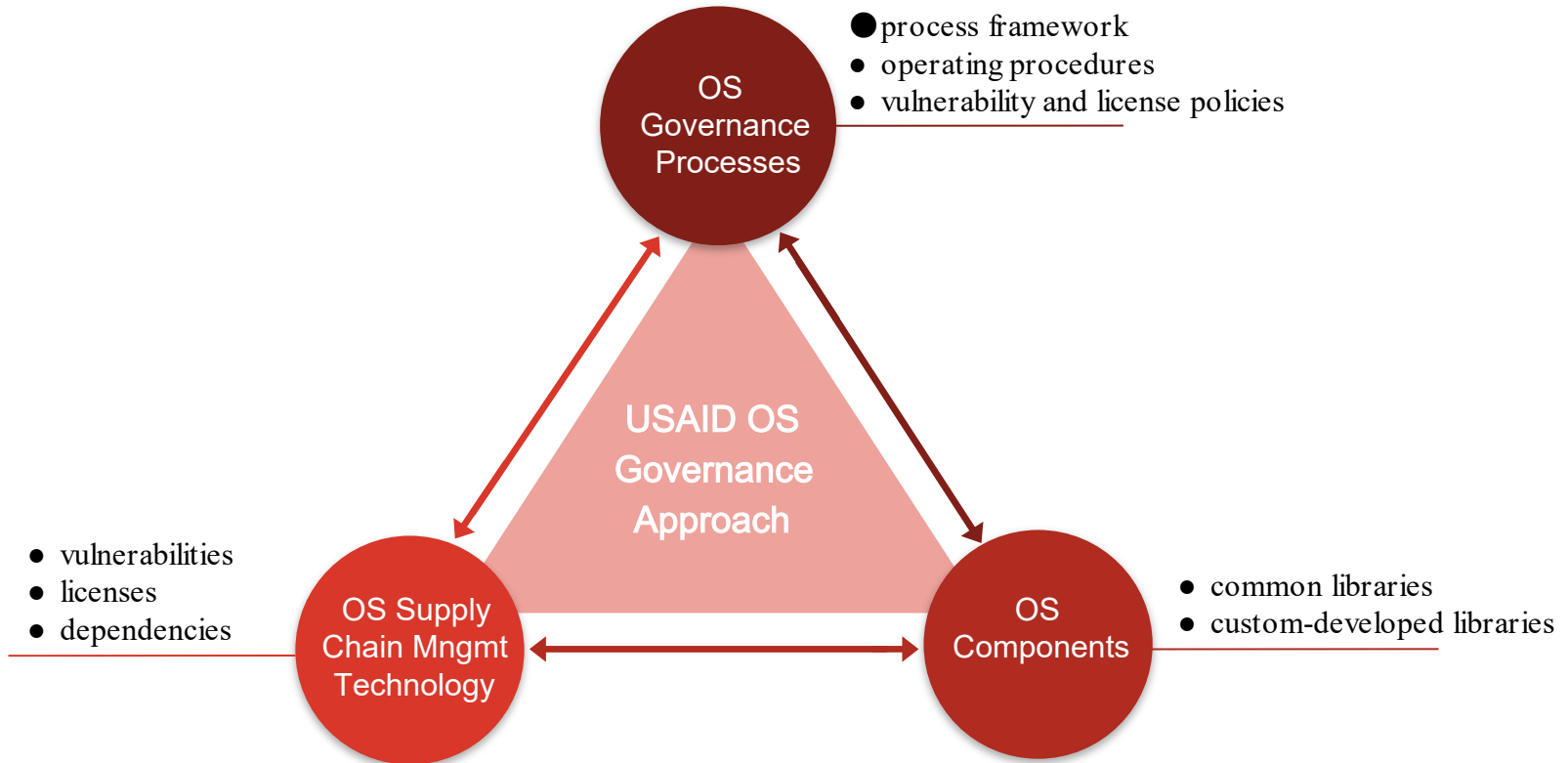
ORGANIZATIONAL CAPACITY

team(s) to govern risk associated with OS libraries and packages

The USAID data science program relies on strong governance foundations to succeed.

USAID OS Library and Package Governance

USAID is establishing OS library and package governance based upon guidance and lessons from other federal agencies. USAID's OS governance approach focuses on software supply chain management.

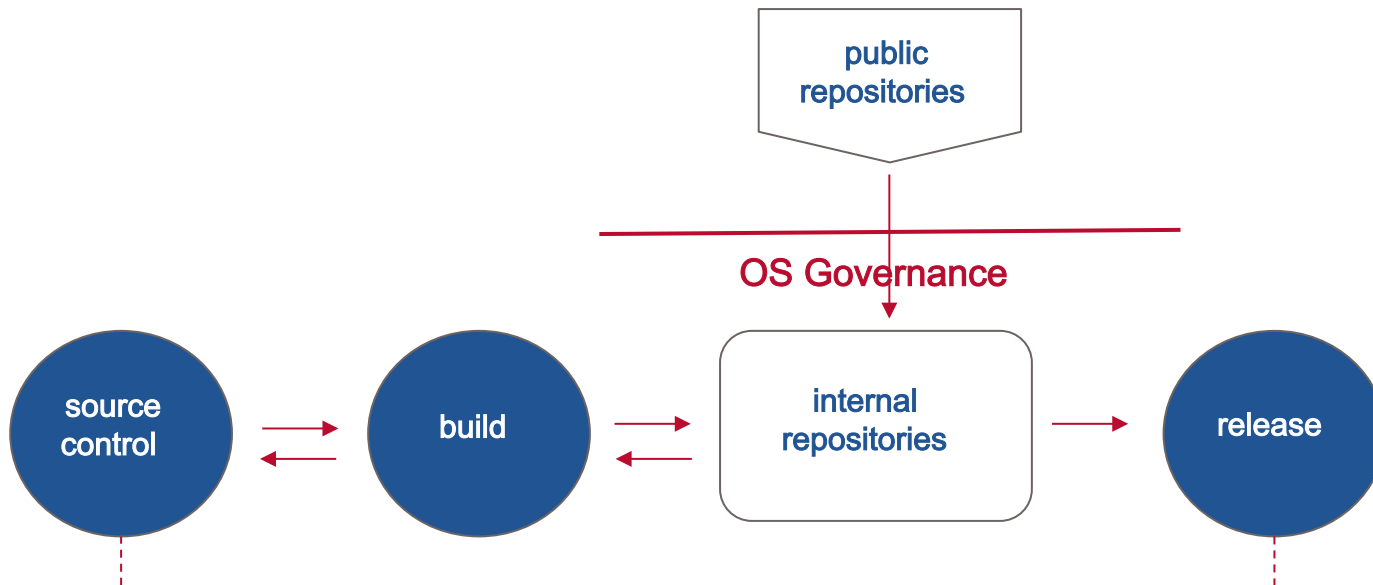


USAID OS Library and Package Management

Like other federal agencies and organizations, USAID is advancing OS library and package management that operates internal repositories of approved, hardened libraries and packages. USAID developers and data scientists will use the internal repositories to access the hardened libraries and packages for their work.

USAID's goal is to ensure that developers and data scientists who are working in the Agency's secure IT environment use hardened libraries and packages from day one of their data science development work.

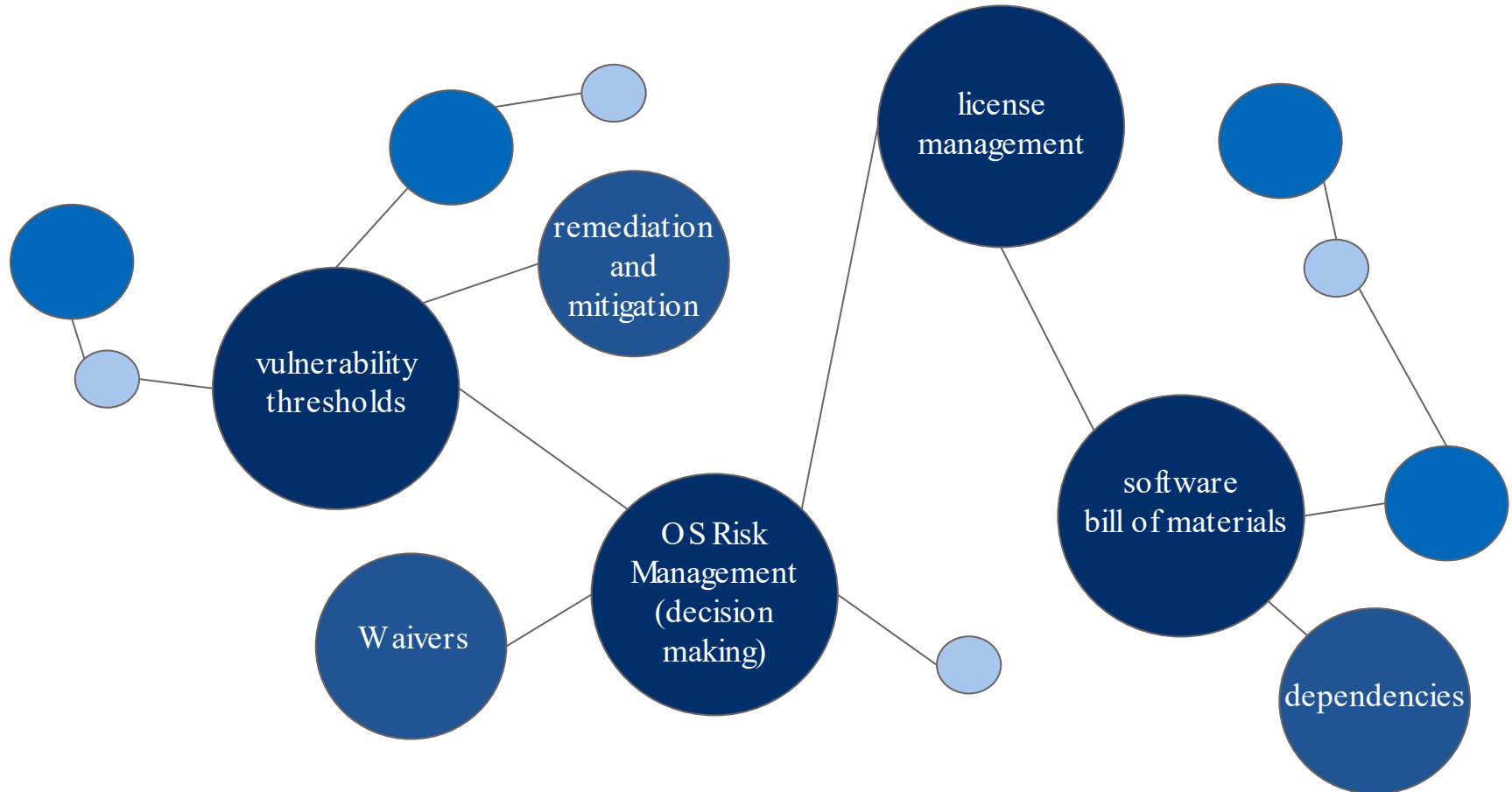
Example OS Library and Package Management Workflow



Cross-Government Coordination and Solutions

Federal agencies, both within and beyond the federal statistical system, should coordinate to establish common OS governance approaches and consider shared solutions for managing OS use in secure environments. *Several agencies have formed a community of practice, which welcomes new agency participation.*

Common Federal Agency Challenges for Governing OS Libraries and Packages





QUESTIONS

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aidscape.usaid.gov

data.usaid.gov

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