



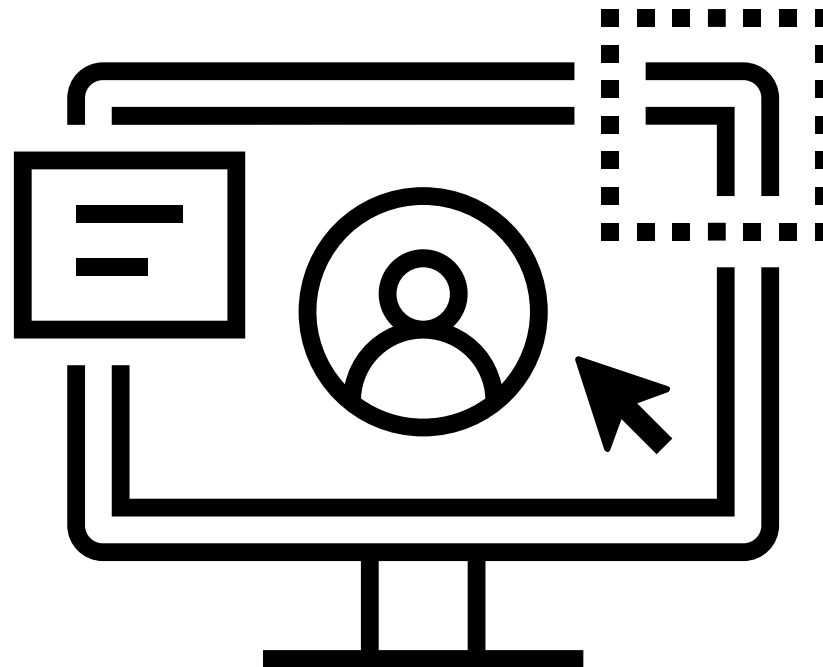
**TEXAS RE**

# **Software Integrity**

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# CIP-010-4 R1, Part 1.6 Abridged Language



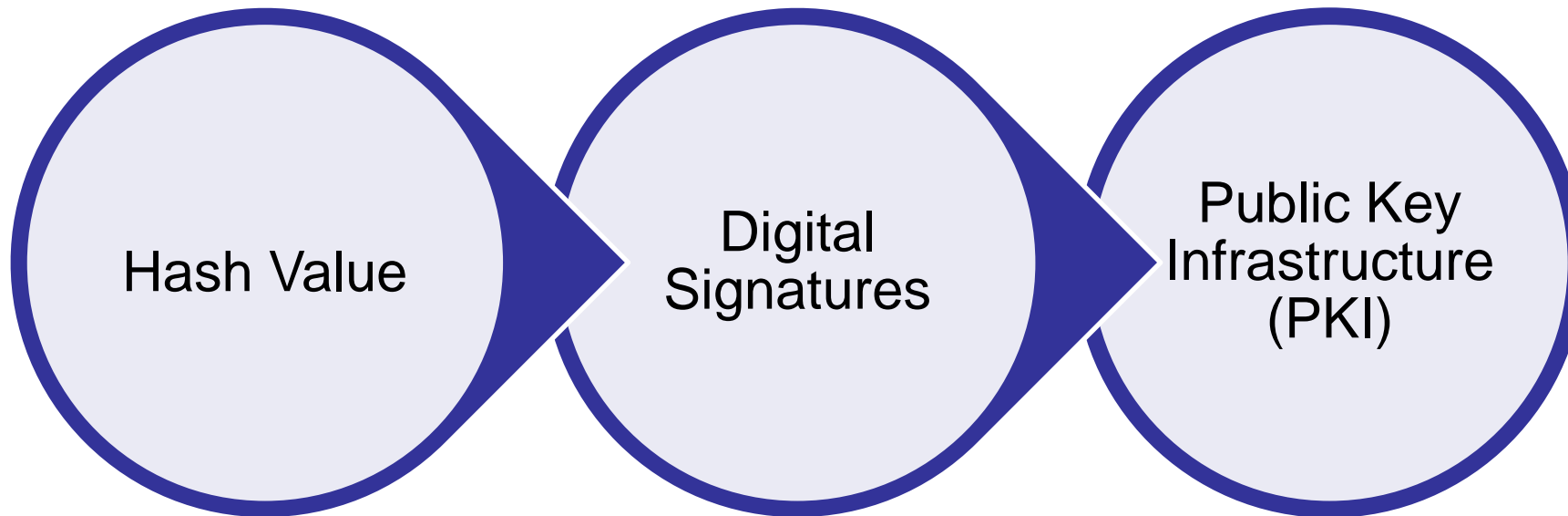
## For Baseline Changes

Verify the identity of the software source  
&

Verify the integrity of the software obtained from the software source



# Example Approaches – Verifying Integrity



# Internal Controls

## SI-7 SOFTWARE, FIRMWARE, AND INFORMATION INTEGRITY

### Control:

- a. Employ integrity verification tools to detect unauthorized changes to the following software, firmware, and information: [*Assignment: organization-defined software, firmware, and information*]; and
- b. Take the following actions when unauthorized changes to the software, firmware, and information are detected: [*Assignment: organization-defined actions*].

Discussion: Unauthorized changes to software, firmware, and information can occur due to errors or malicious activity. Software includes operating systems (with key internal components, such as kernels or drivers), middleware, and applications. Firmware interfaces include Unified Extensible Firmware Interface (UEFI) and Basic Input/Output System (BIOS). Information includes personally identifiable information and metadata that contains security and privacy attributes associated with information. Integrity-checking mechanisms—including parity checks, cyclical redundancy checks, cryptographic hashes, and associated tools—can automatically monitor the integrity of systems and hosted applications.

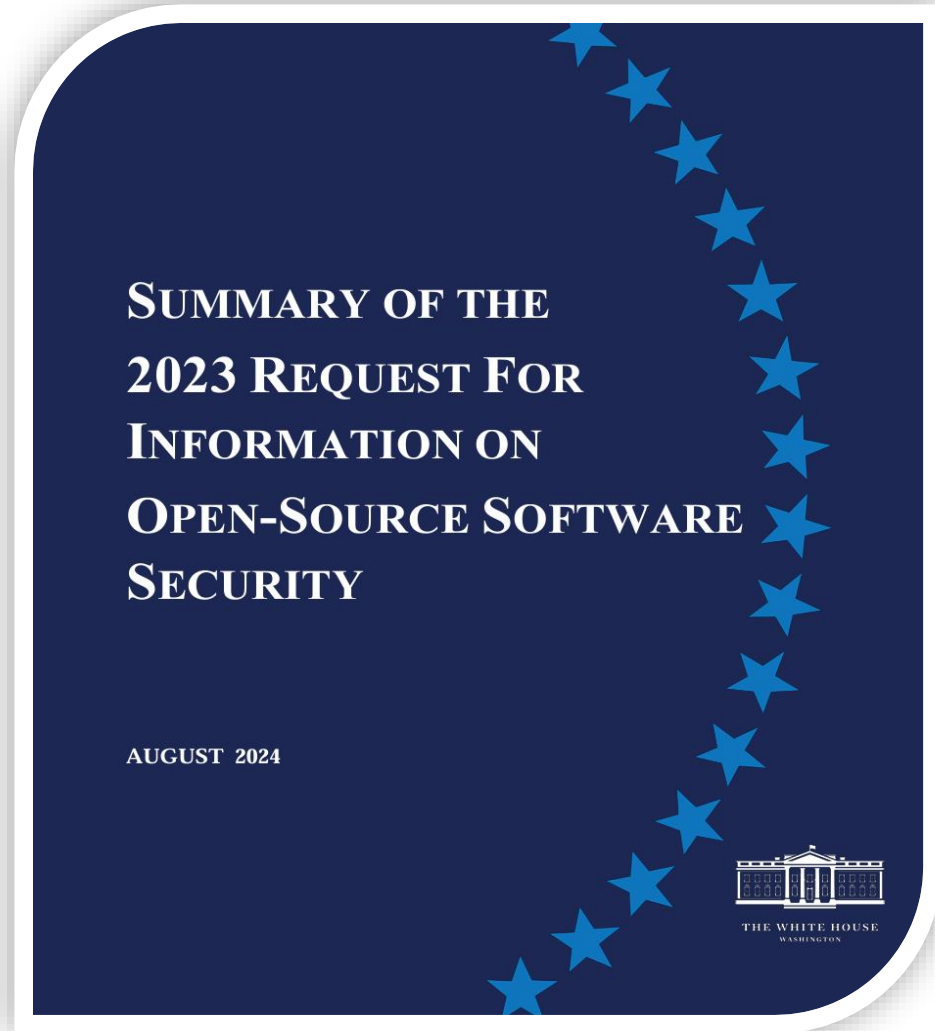
Related Controls: [AC-4](#), [CM-3](#), [CM-7](#), [CM-8](#), [MA-3](#), [MA-4](#), [RA-5](#), [SA-8](#), [SA-9](#), [SA-10](#), [SC-8](#), [SC-12](#), [SC-13](#), [SC-28](#), [SC-37](#), [SI-3](#), [SR-3](#), [SR-4](#), [SR-5](#), [SR-6](#), [SR-9](#), [SR-10](#), [SR-11](#).

Control Enhancements:





# Open-Source Software Security Initiative (OS3I)



[Cisa.gov/opensource](https://Cisa.gov/opensource)



The background of the slide features a blurred Texas state flag on the left and a close-up of a wind turbine's hub and blades on the right, all set against a clear blue sky.

# Questions?



**TEXAS RE**

Ensuring electric reliability for Texans