To create a security case for ACAS Xu using the provided security case pattern and the Domain Information, I will instantiate the pattern by replacing the placeholders and by removing uninstantiated decorators once instantiated. Additionally, I will confirm that developed elements are in place where the model indicates they should be. Below is the instantiation of the pattern into a specific assurance case for the ACAS Xu system:

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\*\*ACAS Xu Security Case Hierarchy\*\*

- G0: ACAS Xu satisfies security requirements

- Context: Description of ACAS Xu

- Context: Security Requirements (SR) are requirements about protecting ACAS Xu from malicious entities

- Justification: The argumentation is based on satisfaction of Security Requirements

- Assumption: ACAS Xu System Security Requirements Specifications (SRS) are complete, adequate, and consistent

- Strategy: S0 Argue through asset protection and secure development requirements

- G1: ACAS Xu satisfies the asset protection requirements

- Assumption: Asset inventory is established for ACAS Xu

- Strategy: S1 Argue through the different stages of the system development life cycle

- G3: Asset protection requirements are met during the architecture design phase

- Context: Description of the ACAS Xu architecture

- Strategy: S2 Argue through deriving security threats from SRs

- G5: ACAS Xu architecture is protected against identified security threats

- Assumption: All relevant threats have been identified for ACAS Xu

- Strategy: S3 Argue over each security threat

- G0.1: ACAS Xu architecture is protected against Tampering with GPS and processors

- G0.2: ACAS Xu architecture is protected against Spoofing on Sensors and processors

- G0.3: ACAS Xu architecture is protected against Elevation of Privileges in the Planning System

- Context: Description of the ACAS Xu system architecture model

- G6: \*\*ACAS Xu architecture is validated (undeveloped)\*\*

- Context: ACAS Xu system architecture model is well defined in a formal method

- Justification: Detection and mitigation of threats fulfill SRs

- G4: \*\*Asset protection requirements are met during other phases (undeveloped)\*\*

- G2: \*\*ACAS Xu satisfies secure development requirements (undeveloped and uninstantiated)\*\*

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Here, "undeveloped" indicates areas needing further development based on the pattern, while non-marked elements have been instantiated. This hierarchy effectively translates the provided pattern with domain-specific information, reflecting how to protect against identified threats (using ST identifiers) and situating these within the structure of ensuring asset protection and secure development in different phases of system development.