Based on the provided pattern and the domain information about Instant Messaging (IM) software, I will instantiate the security case. Here, placeholders are replaced with IM software-specific details, and the hierarchical structure is maintained to depict the GSN's logical and visual formalization.

\*\*Security Case for Instant Messaging (IM) Software\*\*:

- \*\*G1: Instant Messaging software is acceptably secure in Interactive Systems\*\*

- \*\*Contexts\*\*:

- C1: Definition and description of Instant Messaging software

- C2: Definition and description of Interactive Systems

- C3: "Acceptably secure" is defined as comprehensive protection against unauthorized access, data leaks, and threats from external or internal sources.

- \*\*Strategy S1: Argument that IM software assets are under protection\*\*

- \*\*Justification J1: Protection of IM software assets supports that the software is acceptably secure\*\*

- \*\*Goal G2: All identified IM software critical assets are protected\*\*

- \*\*Context C4: List of IM software critical assets\*\*

- Registration information

- Registration process

- User account information

- Authentication information

- Login process

- Chat logs

- \*\*Strategy S2: Separate arguments for each IM software critical asset\*\*

- \*\*Justification J2: Relationship between assets is clear and can be argued separately\*\*

- \*\*Goal G3: IM software critical asset 'Chat logs' is protected\*\*

- \*\*Strategy S3: Argument that the asset 'Chat logs' which belongs to the type 'Data' is protected\*\*

- \*\*Context C5: List of software critical asset types in PEDD (Process, Environment Entity, Data Exchange, Data Storage)\*\*

- \*\*Justification J3: Types of software assets are verified according to PEDD\*\*

- \*\*Goal G4-1: IM software critical asset 'Chat logs' which belongs to 'Data' is protected\*\*

- \*\*Goal G4-2: IM software critical asset 'Login process' which belongs to 'Process' is protected\*\*

- \*\*Goal G4-3: IM software critical asset 'User account information' which belongs to 'Data Storage' is protected\*\*

- \*\*Goal G4-4: IM software critical asset 'Authentication information' which belongs to 'Data Exchange' is protected\*\*

This hierarchical tree structure represents how the goals, strategies, and supporting elements (contexts and justifications) interact within the instantiated assurance case for IM software, showing a multi-layered argumentation path ensuring security of critical assets based on the PEDD classification. Each goal lower in the structure becomes more specific in relation to an aspect of the software's security.