To create a security case for the Instant Messaging (IM) software using the given security case pattern, we need to fill in the placeholders with the appropriate domain-specific information for the IM software. Each Goal, Strategy, Context, and Justification will replace the placeholders in the pattern with the relevant information. Below is the hierarchical tree structure displayed using dashes (-) to denote different levels:

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- Goal (G1, IM software is acceptably secure in the communication system)

- Context (C1, Definition and description of IM software)

- Context (C2, Definition and description of communication system)

- Context (C3, Definition of acceptably secure)

- Strategy (S1, Argument that IM software assets are under protection)

- Justification (J1, Protection of IM software assets supports that IM software is acceptably secure)

- Goal (G2, All identified IM software critical assets are protected)

- Context (C4, List of IM software critical assets)

- Strategy (S2, Respective arguments of IM software critical assets)

- Justification (J2, Relationship between IM software assets is clear and can be argued separately)

- Goal (G3-1, Registration information is protected)

- Strategy (S3-1, Argument of the type which the registration information belongs to)

- Context (C5, List of IM software critical asset types in PEDD)

- Justification (J3, Types of IM software assets are according to PEDD)

- Goal (G4-1, Registration information which belongs to Data Storage is protected)

- Goal (G3-2, Registration process is protected)

- Strategy (S3-2, Argument of the type which the registration process belongs to)

- Context (C5, List of IM software critical asset types in PEDD)

- Justification (J3, Types of IM software assets are according to PEDD)

- Goal (G4-2, Registration process which belongs to Process is protected)

- Goal (G3-3, User account information is protected)

- Strategy (S3-3, Argument of the type which the user account information belongs to)

- Context (C5, List of IM software critical asset types in PEDD)

- Justification (J3, Types of IM software assets are according to PEDD)

- Goal (G4-3, User account information which belongs to Data Storage is protected)

- Goal (G3-4, Authentication information is protected)

- Strategy (S3-4, Argument of the type which the authentication information belongs to)

- Context (C5, List of IM software critical asset types in PEDD)

- Justification (J3, Types of IM software assets are according to PEDD)

- Goal (G4-4, Authentication information which belongs to Data Exchange is protected)

- Goal (G3-5, Login process is protected)

- Strategy (S3-5, Argument of the type which the login process belongs to)

- Context (C5, List of IM software critical asset types in PEDD)

- Justification (J3, Types of IM software assets are according to PEDD)

- Goal (G4-5, Login process which belongs to Process is protected)

- Goal (G3-6, Chat logs are protected)

- Strategy (S3-6, Argument of the type which the chat logs belong to)

- Context (C5, List of IM software critical asset types in PEDD)

- Justification (J3, Types of IM software assets are according to PEDD)

- Goal (G4-6, Chat logs which belong to Data Storage is protected)

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Explanation:

- \*\*G1\*\*: The top-level goal asserting that the IM software is acceptably secure within the communication system.

- \*\*C1\*\*, \*\*C2\*\*, \*\*C3\*\*: Providing definitions and descriptions relevant to the IM software, the communication system, and the term "acceptably secure."

- \*\*S1\*\*: A strategy to argue that the IM software's assets are protected.

- \*\*J1\*\*: Driving justification linking the protection of software assets to the overall security goal.

- \*\*G2\*\*: A subsequent goal focused on ensuring all critical assets of the IM software are protected.

- \*\*C4\*\*: Context listing the critical assets specific to the IM software.

- \*\*S2\*\*: Strategy for providing detailed arguments for each critical asset.

- \*\*J2\*\*: Justification clarifying that assets can be argued separately.

- \*\*G3-x\*\*: Specific goals for the protection of each critical asset identified from the domain information.

- \*\*S3-x\*\*: Strategies for arguing the protection of each critical asset type.

- \*\*C5\*\*: Context providing a list of IM software critical asset types in PEDD classification.

- \*\*J3\*\*: Justification confirming that the types of IM software assets are correctly categorized according to PEDD.

- \*\*G4-x\*\*: Goals addressing the protection of each specific asset type as per PEDD classification.

This hierarchical structure by substituting placeholders with domain-specific information adheres to the given pattern and reflects a comprehensive security case for the IM software.