Given the security pattern and the domain information for Instant Messaging (IM) software, the security case for the IM software can be instantiated and represented in a hierarchical tree format as follows:

### Security Case for Instant Messaging (IM) Software

- G1: Instant Messaging (IM) software is acceptably secure in the system.

- InContextOf:

- C1: Definition and description of Instant Messaging (IM) software

- C2: Definition and description of the system

- C3: Definition of acceptably secure

- SupportedBy:

- S1: Argument that IM software assets are under protection

- InContextOf:

- J1: Protection of software assets supports that software is acceptably secure

- SupportedBy:

- G2: All identified IM software critical assets are protected

- SupportedBy:

- S2: Respective arguments of IM software critical assets

- InContextOf:

- C4: List of IM software critical assets

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

- SupportedBy:

- G3: Registration information is protected

- SupportedBy:

- S3: Argument of the type which the critical asset Registration information belongs to

- InContextOf:

- C5: List of software critical asset types in PEDD

- J3: Types of software assets are according to PEDD

- SupportedBy:

- G4: Registration information, which belongs to Data Exchange type, is protected.

- G3: Registration process is protected

- SupportedBy:

- S3: Argument of the type which the critical asset Registration process belongs to

- InContextOf:

- C5: List of software critical asset types in PEDD

- J3: Types of software assets are according to PEDD

- SupportedBy:

- G4: Registration process, which belongs to Process type, is protected.

- G3: User account information is protected

- SupportedBy:

- S3: Argument of the type which the critical asset User account information belongs to

- InContextOf:

- C5: List of software critical asset types in PEDD

- J3: Types of software assets are according to PEDD

- SupportedBy:

- G4: User account information, which belongs to Data Exchange type, is protected.

- G3: Authentication information is protected

- SupportedBy:

- S3: Argument of the type which the critical asset Authentication information belongs to

- InContextOf:

- C5: List of software critical asset types in PEDD

- J3: Types of software assets are according to PEDD

- SupportedBy:

- G4: Authentication information, which belongs to Data Exchange type, is protected.

- G3: Login process is protected

- SupportedBy:

- S3: Argument of the type which the critical asset Login process belongs to

- InContextOf:

- C5: List of software critical asset types in PEDD

- J3: Types of software assets are according to PEDD

- SupportedBy:

- G4: Login process, which belongs to Process type, is protected.

- G3: Chat logs are protected

- SupportedBy:

- S3: Argument of the type which the critical asset Chat logs belongs to

- InContextOf:

- C5: List of software critical asset types in PEDD

- J3: Types of software assets are according to PEDD

- SupportedBy:

- G4: Chat logs, which belongs to Data Storage type, are protected.

This structured representation ensures that all critical assets of the IM software are considered and protected according to their respective types, thereby establishing the overall security of the software.