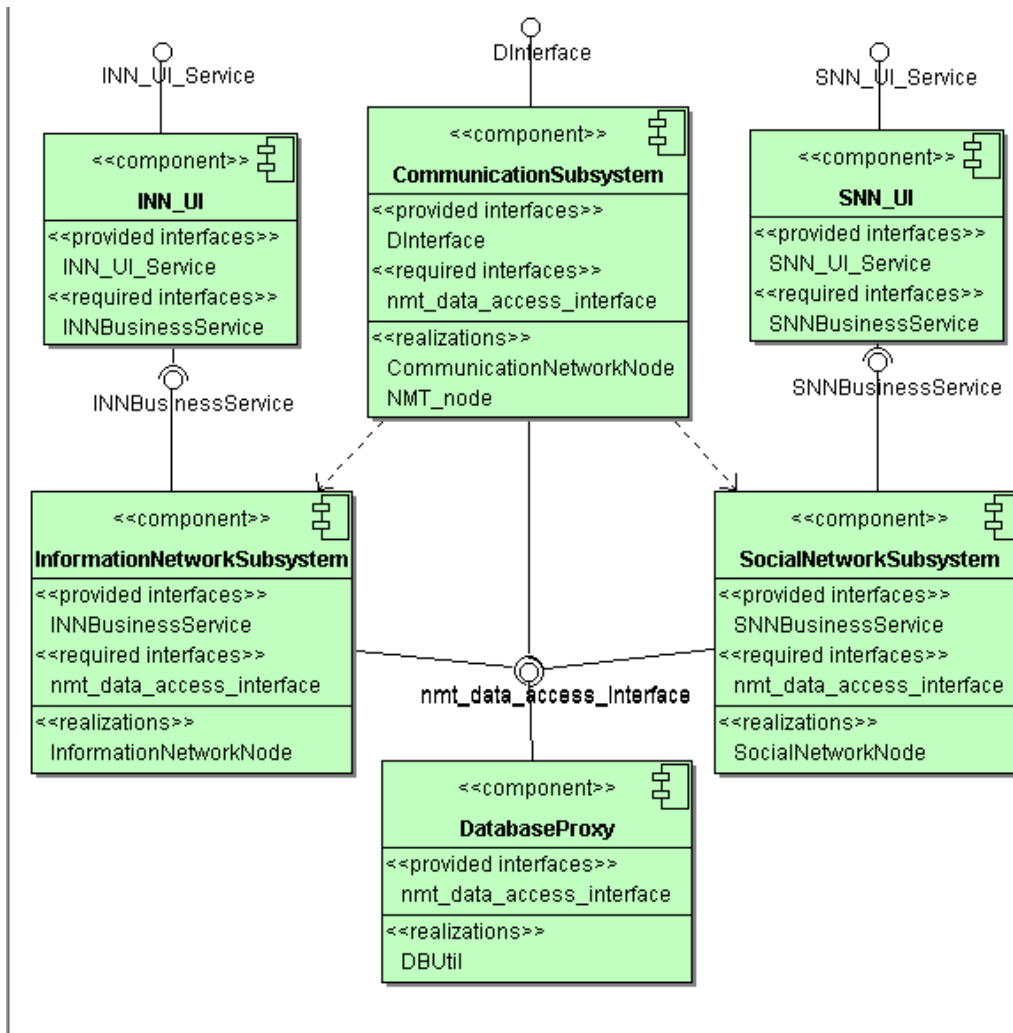# *Design structure*

UI component/ Presentation layer:

This tier, topmost level of the application, consists of SocialNetworkNode_UI, InformationNetworkNode_UI and other needed UIs. It provides friendly visible User Interface; and also, it interacts with business layer directly and display the result which from lower layers.

INN_UI:

1. This component provides a friendly user interface;
2. It provides an access point to informationNetwork_Node;

3. It deals with one of the main function "display()" CommObj from other source or generate by its own;
4. It requires a INNBusinessService interface to access InformationNetworkSubsystem .

INN_UI_Service:

| getLocalData() | retrieve data(CommObj) from localDatabase of informationNetwork node. |
| displayCommObj() | show clients the detail of CommObj(msgId, targetNode, srcNode, nodeType, fieldType, Data, timeSent, timeRec, priority, ack). |

SNN_UI:

1. This component provides a friendly user interface;
2. It provides a access point to socialNetwork_Node;
3. It deals with one of the main function "display()" CommObj from other source or generated by its own;
4. It requires a SNNBusinessService interface to access SocialNetworkSubsystem.

SNN_UI_Service:

| getLocalData() | retrieve data(commObj) from localDatabase of SocialNetwork node. |
| displayCommObj() | show clients the detail of commObj(msgId, targetNode, srcNode, nodeType, fieldType, Data, timeSent, timeRec, priority, ack). |

Subsystem Component / Business logic layer:

This tier combined with InformationNetwork, SocialNetwork and CommunicationNetwork; it provides the main functions of the whole system; as an independent tier, it also provides and interacts data with E_tool.

InformationNetworkSubsystem:
1. This component is responsible for every communication related to information network;
2. It provides all needed functions and connected to INN_UI;
3. It requires a nmt_data_access_interface to access DatabaseProxy.

INNBusinessService:

| setLocalData() | modify data(CommObj) from localDatabase of informationNetwork node. |
| getLocalData() | retrieve data(CommObj) from localDatabase of informationNetwork node. |

SocialNetworkSubsystem:

1. This component is responsible for every communication related to social network;
2. It provides all needed functions and connected to SNN_UI;
3. It requires a nmt_data_access_interface to access DatabaseProxy.

SNNBusinessService:

| setLocalData() | modify data(CommObj) from localDatabase of informationNetwork node. |
| getLocalData() | retrieve data(CommObj) from localDatabase of informationNetwork node. |

CommunicationSubsystem:
1. This component is responsible for receiving and sending data from and to remote network users;
2. It deals with network communication details with E_tool or software the remote user is using to communicate;
3. It is responsible for handle all outgoing and incoming communication;
4. It also provides E_interface to connect with E_Tool.

DInterface:

| recieveData() | Receive data/CommObj from E |

DB_Proxy /Data Access Layer:

This tier consists of DB_Proxy and Database, where data/CommObj is update, modify, delete, store and retrieve. This tier keeps data neutral and independent from application servers or business logic. Giving data its own tier also improves scalability and performance.

DatabaseProxy:

1. This component is responsible for providing a proxy to access Database;
2. It deals with the behaviors that when other components access, store, delete, update and insert data through DB_Proxy.

Nmt_data_access_interface:

getDBConnection()	open local database
createNMT()	create a table named NMT
insertCommObj()	insert a single record or multiple records into the table
updateCommObj()	update existing records in a table
deleteCommObj()	delete records in a table
selectCommObj	Select data from the database. The result is stored in a result table, called the result-set.