

Security and Privacy Modeling and Implementation with XACML/ALFA and Fabric

Meeting Date: February 25, 2022.

Start Time: 5:00 PM

End Time: 6:30 PM

Attendees: Dr. Yue, Siddhartha Illa, Venkata Naga Bhaavagni Maddi, Farhana Shaik Begum, Sripada Vallabh Kaparthi, Ganesh Nyaupane, Preethi Vuchuru, Madhuri Koduru

Prepared By: Venkata Naga Bhaavagni Maddi

Items Discussed:

1) Sripadh (Working on Attributes from BPMN Diagram)

Feedback on attributes created.

Dr. Yue and Dr. Sha

A) Department, Employee, Employee Id, Title are not needed in current stage. There are 5 kinds of attributes in Action attributes. There is a framework for what kinds of attributes can be included. We are not currently dealing with environment attributes. subject attributes are good which presented. Follow up for the updated document of ABAC based Security policies that can help you to write more attributes.

2) Ganesh (Working on CA and MSP)

Explained how the attributes are stored in sqlite3 and discussion about attributes retrieval and Storage.

Dr. Yue.

A) Why the attributes are stored in database and not in blockchain? Explained how the viewer attribute has been created. A new chain node is created with a new attribute, how and where the new attribute is created is shown. Discussion about where the attributes are stored. Explained how the client id is being created. SubmitClientId() may change depending on who submitted the transaction. How the new attributes are created? New user is being created not the new attributes for the current user.

3) Bhaavagni and Farhana (Working on Smart Contracts)

Developed a smart contract following the Asset Transfer ABAC model. The external application which invokes smart contracts has been implemented using a script file. Is that the correct way to do or are there any other approaches that we can follow?

Dr. Yue

A) Asked us to show the sample smart contract that has been developed. Where the ABAC policy is being implemented? There is a creator attribute that can help us define the simple policy. There is a problem with the design in the Smart Contract implementation. Pay more attention to the asset structure that you are creating. Gave feedback on the security policy and how it can be improved further. The shell script file is reviewed. The script file should contain the testing code. Include all the scenarios while you test your code.

Dr. Sha

A) You can also use a javascript file to invoke the Smart Contract.

4) Sidharth (Working on CA and MSP)

Discussion about environment attributes, where the static attributes are stored and how dynamic attributes are being stored in the database and which of them will be stored in database and local

MSP.

Dr. Yue

A) Environment variable is not required in current stage. Constantly check the current attributes or updates with us.

Items for next week:

- 1) Developing an external application for invoking Smart Contracts.
- 2) Making improvements to the requirements identified from the BPMN Diagram.
- 3) Writing some example Alfa policies.
- 4) Accessing certificate attributes in smart contracts.
- 5) Adding attributes to the identities.