Motor Insurance Claim

**Problem Statement:**

Many individuals and firms own more than one vehicle, which could be insured with multiple insurance companies. Some vehicle owners are very meticulous and honest when they submit a damage claim; some others tend to inflate the damage and make excessive claims or even make spurious damage claims. How does a single iinsurance company profile a client in this regard.? More so, how do a group of insurance companies share data on customer credibility without sharing too much data?

**Proposed solution**:

Motor insurance companies together decide to build a reputation score for Vehicle owners, analogous to the Credit Rating system devised by Finance companies to assess a person’s creditworthiness. The “Reputation System” will be shared among the Insurance companies and will be stored in a Blockchain contract on Ethereum. The reputation system consists of “positive” and “negative” points that are assigned to the policy holder for every valid claim approved or invalid claim rejected. The insurance companies will use these reputation points as they desire. For example, positive reputation points could translate to a discount in the premium for the next policy or could be a ticket to speedy approval of claims.

The Blockchain contract will need to store relevant details with regard to each approval or rejection, apart from the cumulative “positive” and “negative” points.

**Design:**

A Blockchain Contract to store relevant details of the insurance claim and the status (approval/rejection) of the claim with details. A cumulative total of “positive” and “negative” points will also be stored in the Blockchain contract.

The policyholder will be authenticated through uPort and so the policy holder is identified uniquely.

The Insurance Verifier (from the Insurance company) will do the necessary verification offline and update the status in the Blockchain system – this will be a transaction to award “positive” or “negative” points. (uPort Transaction)

The Policy Holder can login to the system and view the status of his claim as well as get a summary of his “Reputation” score as a uPort credential attestation..

**Players:**

*PolicyHolder* – The owner of the vehicle who has a policy with this insurance company. This is the submitter of the claim

*InsuranceVerifier* – An agent of the Insurance Company who verifies the claim

**Demo Solution:**

In the demo solution, the Contract “Ins” stores the cumulative “positive” and “negative” points per Policy Holder’s network adresss (obtained through uPort).

This contract is deployed on the Rinkeby network. The Insurance company "A11 Insurance" used for this demo is also on the Rinkeby network.

**Verification steps:**

1. Unzip the demo solution into a directory

2. Install the demo.

> npm install

(Ignore errors relating to “Cairo”)

3. Start the server. (this runs a server on localhost - port 3000)

> npm start

4. From the browser (Chrome) connect to it

>[http://localhost:3000](http://localhost:3000/)

5. Login to the system as a submitter

(For simplicity of testing – the same user is used as both submitter and verifier as otherwise two mobile phones (or SIMs) will be required. The code used for the transaction to “award points” based on the “Approve” or “Reject” button uses the conection information stored in the uport state variable. Actually this should be another uPort variable – uportV, but I have not tested that).

This asks you to login through your uPort ID on your mobile.

6. Enter Claim details and submit.

7. The demo now takes you to the Verifier login. Just press the login button, no uport ID here).

8. You can see the current Reputation score of the submitter. Aprove or reject the transaction.

This transaction will need approval through the uPort ID (mobile).

9. Press ‘To Client View” to take you to the Client view. The assumption here is that the client has logged in and is now looking at his reputation score.

10. Click “Get Reputation” to receive the “Reputation” from the Insurance company on your uPort ID (mobile).

**Scenario:**

1. VehicleOwner (logs in through uPort) files a claim for X dollars for vehicle repairs with a reference to the Bill, the bill may be online or available with the submission. The Bill is provided by a vehicle workshop.

2. InsuranceVerifier (logs in through uPort) and approves or rejects the claim.

3. Reputation score- positive or negative is updated.