Eurofiling 2018
Blockchain for financial transparency

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Based on work performed for SMART 2016/0488

EUROPEAN COMMISSION

Directorate-General for Financial Stability, Financial Services and Capital Markets Union

Agenda

- Project context
- Functionality
- Demonstration (simulated)
- Further references

Project context

May 2016 – European Parliament resolution on virtual currencies
Pilot project proposed by MEP Jacob von Weizsäcker on distributed ledger technology

- Starting of work planned for 2017
- To test and to build up knowledge + to build use-case
- Target audience: national and European authorities
- Target topic: finance, financial services, FinTech
- To be executed by the European Commission

Two project to be realised

- European Financial Transparency Gateway (EFTG) – DG FISMA
- DLT observatory – DG CNECT

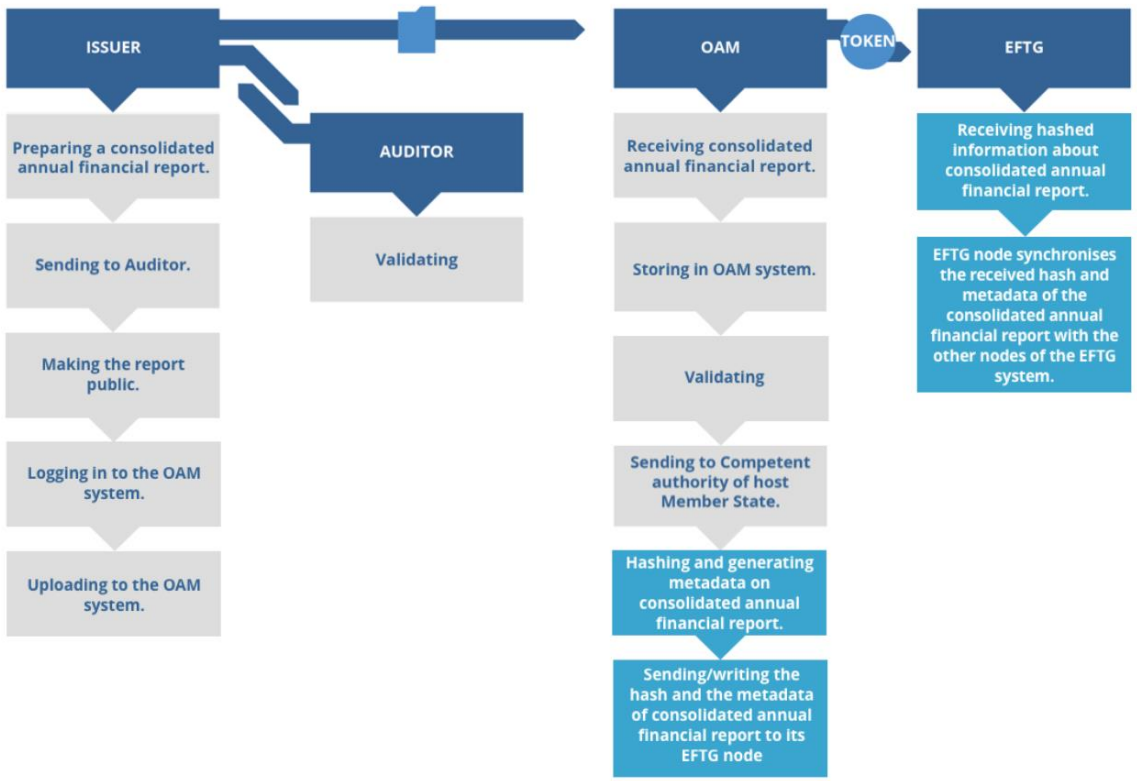
Spring 2017 – Start of design of the idea and preparation of technical work
Summer 2017 – Administration to start the EFTG project
Autumn 2017 – Start of technical work on the EFTG project
Jan 2018 – Closing of Phase 1 of the EFTG project

Functionality

Use cases and business processes

Focus on submission of yearly, half-yearly, and ad-hoc reports.

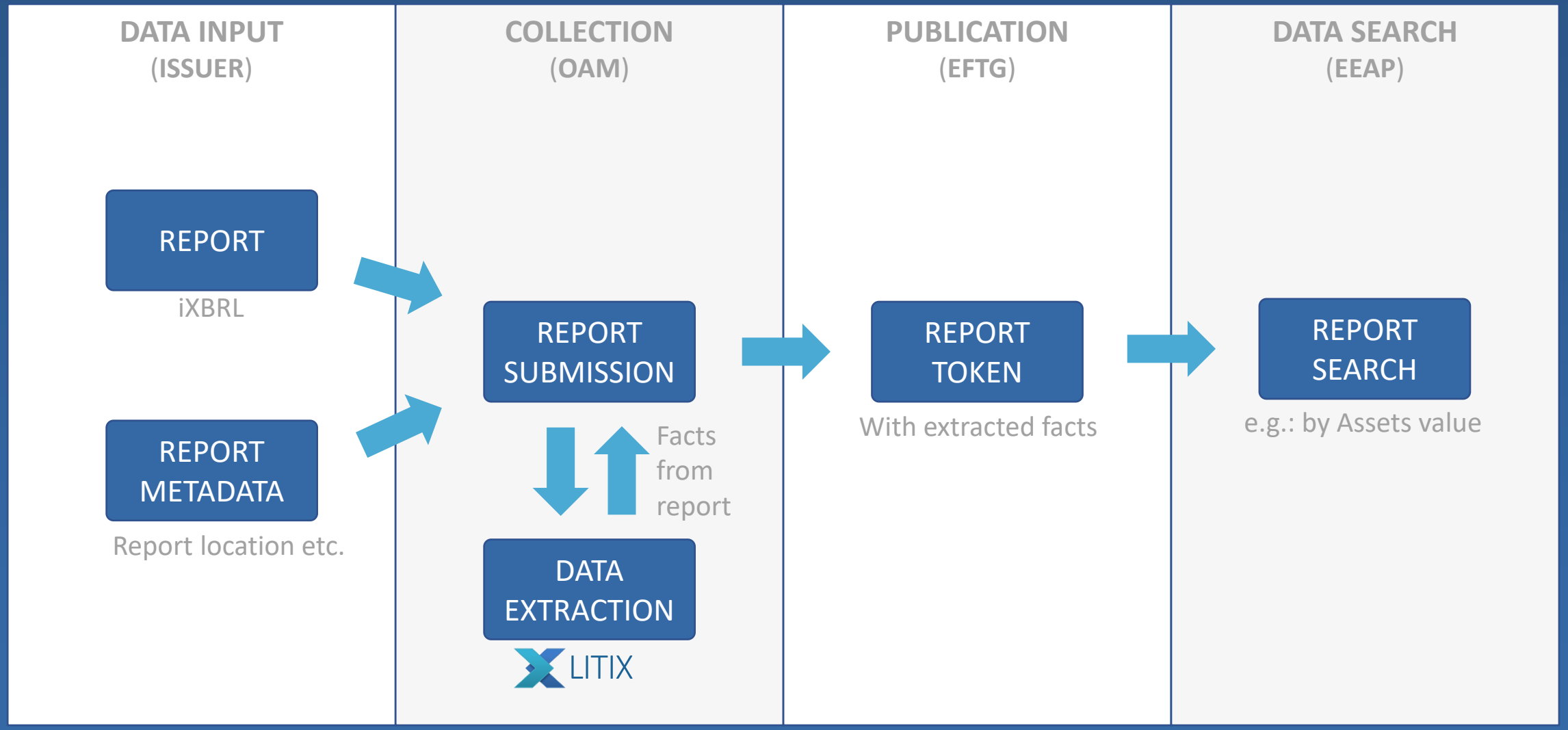
Figure 1: A selected scenario (case) of publishing an annual financial report



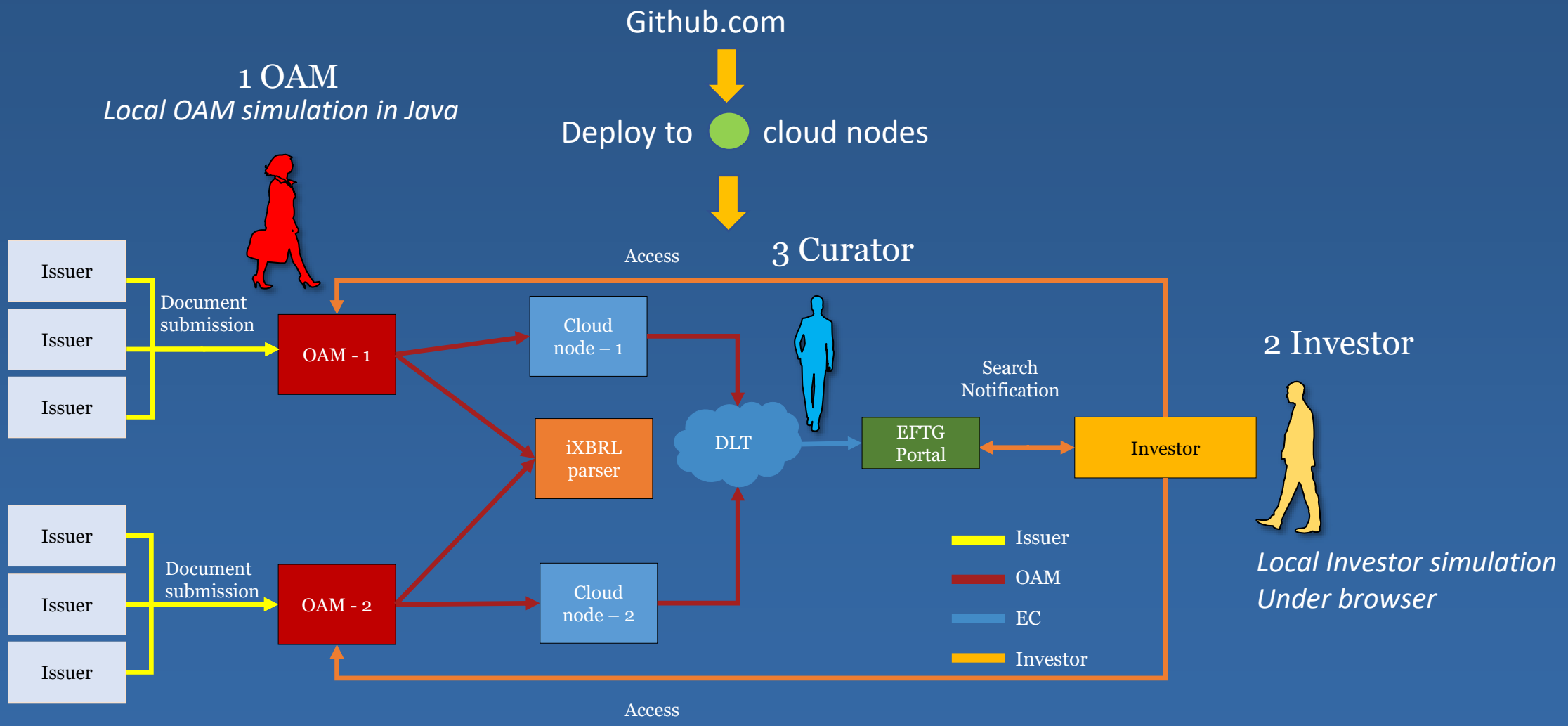
Step	Actor	Action
Assumptions	Issuer	Issuer has not sent its report before (first-time reporting) and is obliged to register in the OAM system.
Step 1	Issuer	Issuer is preparing a consolidated financial statement under the Transparency Directive (according to ESEF).
Step 2	Issuer	Issuer is sending the consolidated annual financial report to Auditor.
Step 3	Auditor	Auditor is auditing the consolidated annual financial report.
Step 4	Issuer	Issuer is making public the consolidated annual financial report (e.g. on its website).
Step 5	Issuer	Issuer logs into the OAM system to upload consolidated annual financial report.
Step 6	Issuer	Issuer is uploading the consolidated annual financial report to the OAM system.
Step 7	OAM	OAM is receiving the consolidated annual financial report in the OAM system.
Step 8	OAM	OAM is storing the consolidated annual financial report in the OAM system.
Step 9	OAM	OAM is validating the consolidated annual financial report in the OAM system.
Step 10	OAM	OAM is sending the consolidated annual financial report to Competent Authority of host Member State.
Step 11	OAM	OAM is hashing and generating metadata on the consolidated annual financial report.
Step 12	OAM	OAM is sending/writing the hash and the metadata of the consolidated annual financial report to its EFTG node.
Step 13	EFTG	EFTG node is receiving the hash and the metadata of the consolidated annual financial report.
Step 14	EFTG	EFTG node synchronises the received hash and metadata of the consolidated annual financial report with the other nodes of the EFTG system.
Result	EFTG	The hash and the metadata of the consolidated annual financial report is available at every node of the EFTG system and the consolidated annual financial report is accessible to all users.

Functionality

Advanced search – design



Three perspectives: OAM, investor, curator

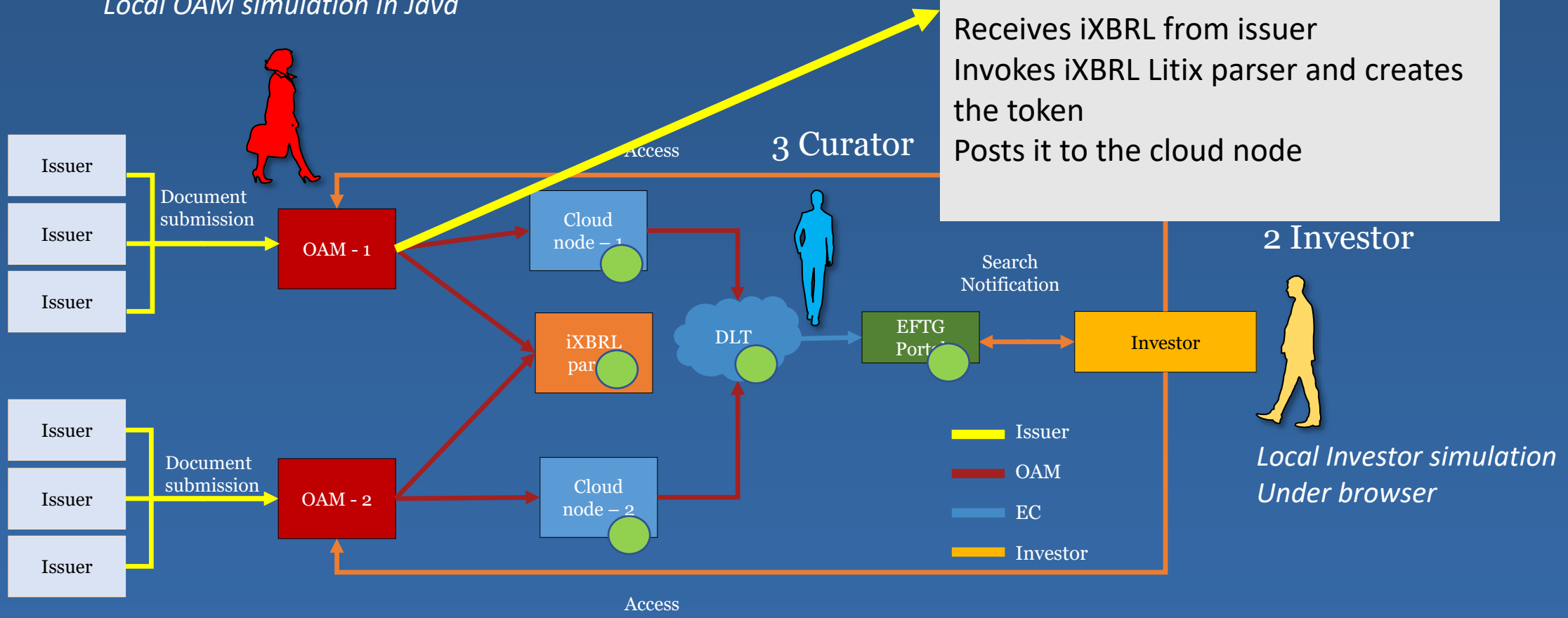


XBRL files from https://www.esma.europa.eu/field-test-esef

OAM

EFTG client library
To be used by OAMs
Used to build OAM simulator for demonstration purposes

Receives iXBRL from issuer
Invokes iXBRL Litix parser and creates the token
Posts it to the cloud node



XBRL files from https://www.esma.europa.eu/field-test-esef

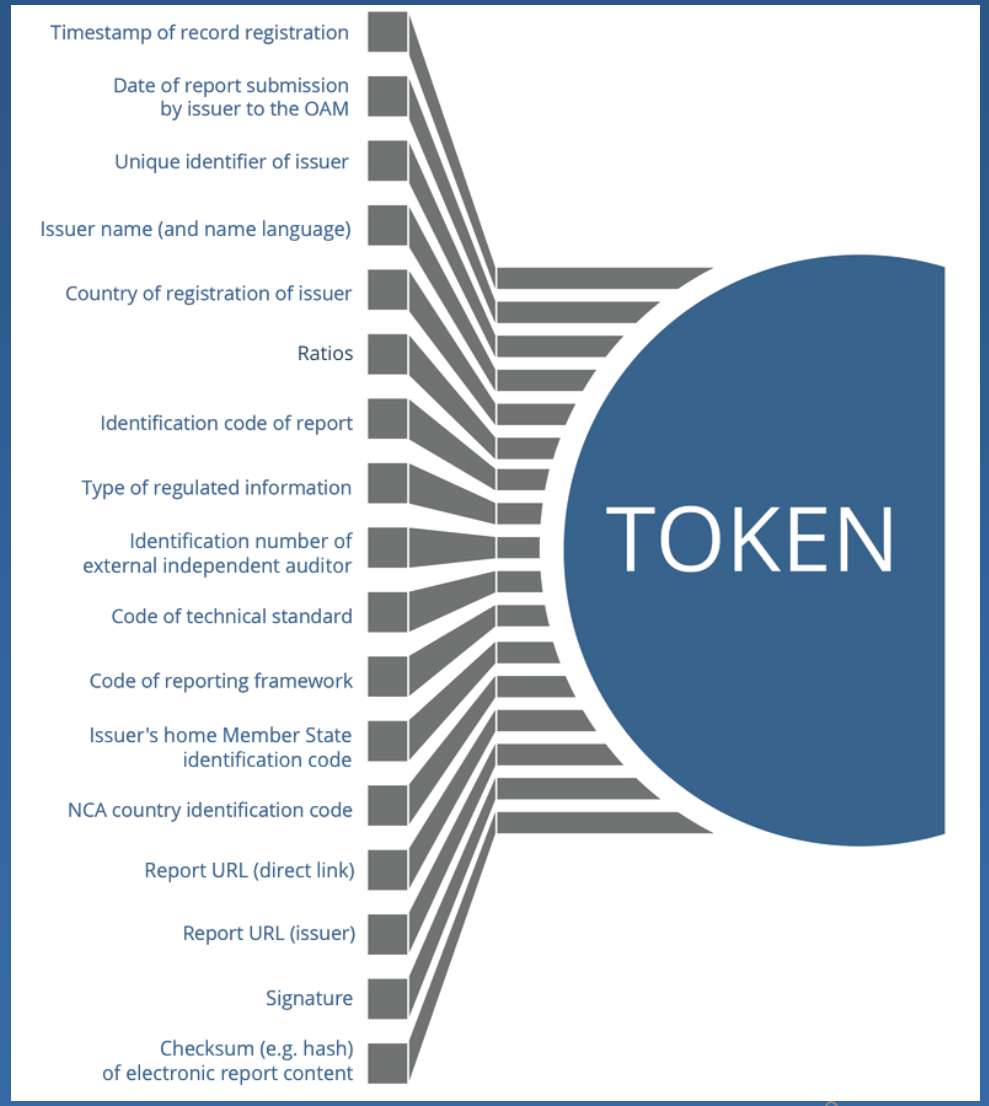
OAM perspective:
EFTG client simulation

EFTG Client

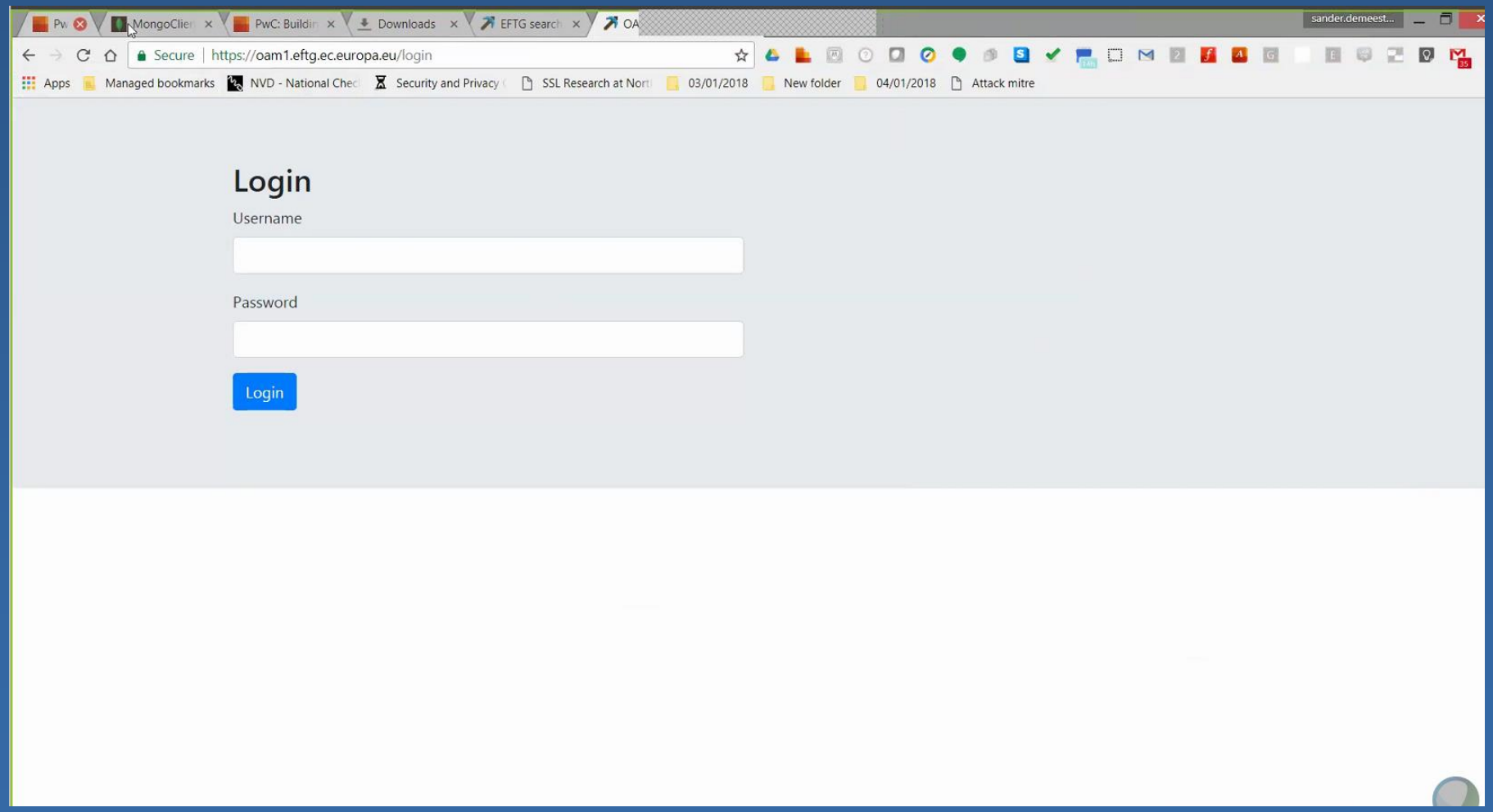
Send data | Send file | Configuration

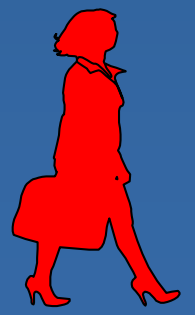
checkSum	random3
codeOfReporting	codeOfReporting
countryOfRegistration	BE
externalAuditor	test
identificationCode	60
issuerHomeState	BE
issuerName	issuerName
language	FR
LEI	12345678901234567891
NCACountryIdentification	BE
regulatedInformationURL_direct	regulatedInformationURL_direct
regulatedInformationURL_issuer	regulatedInformationURL_issuer
signature	signature
technicalStandard	technicalStandard
typeOfRegulation	11

Send



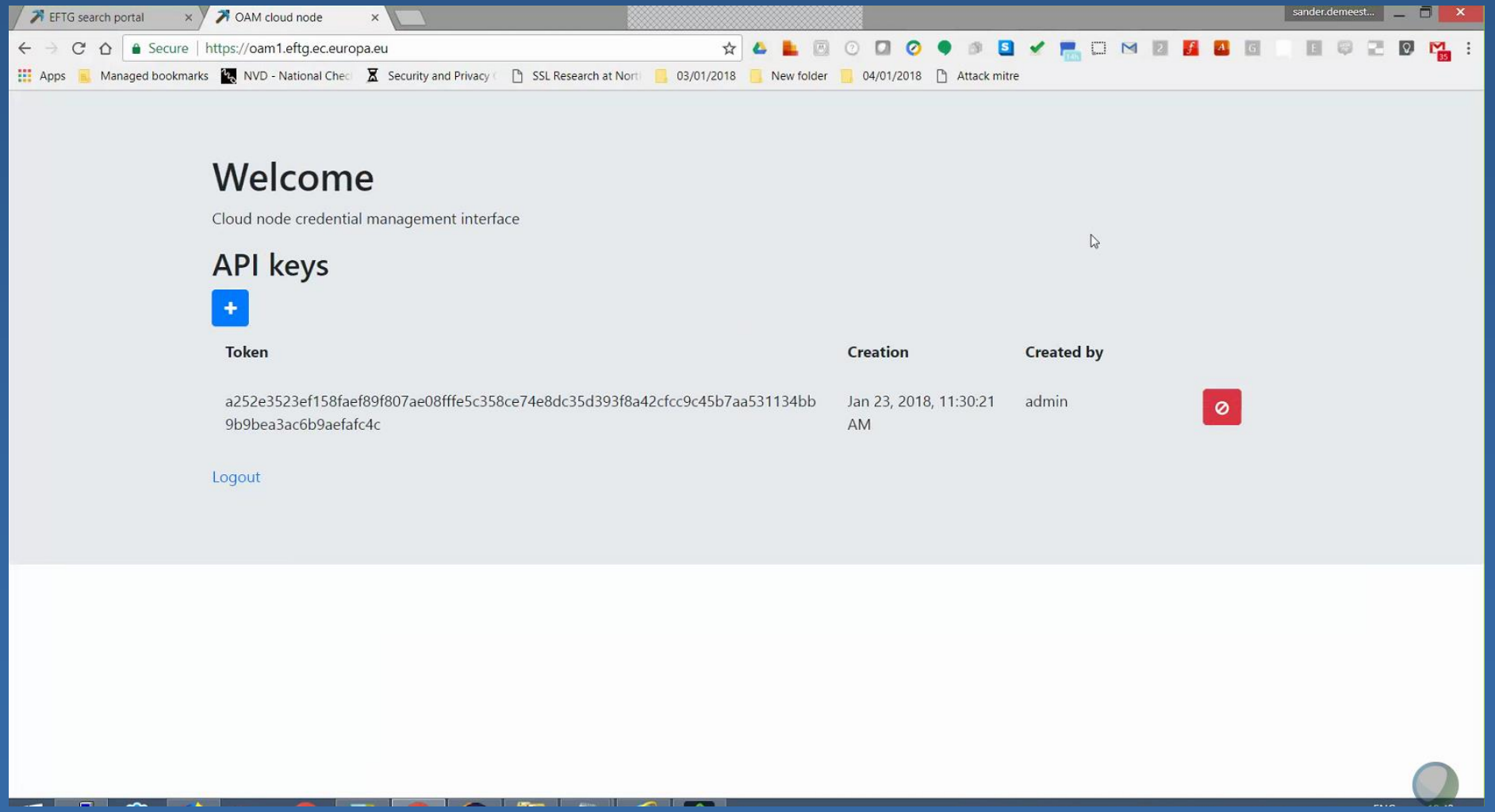
OAM access cloud node

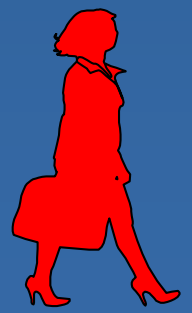




OAM has logged in

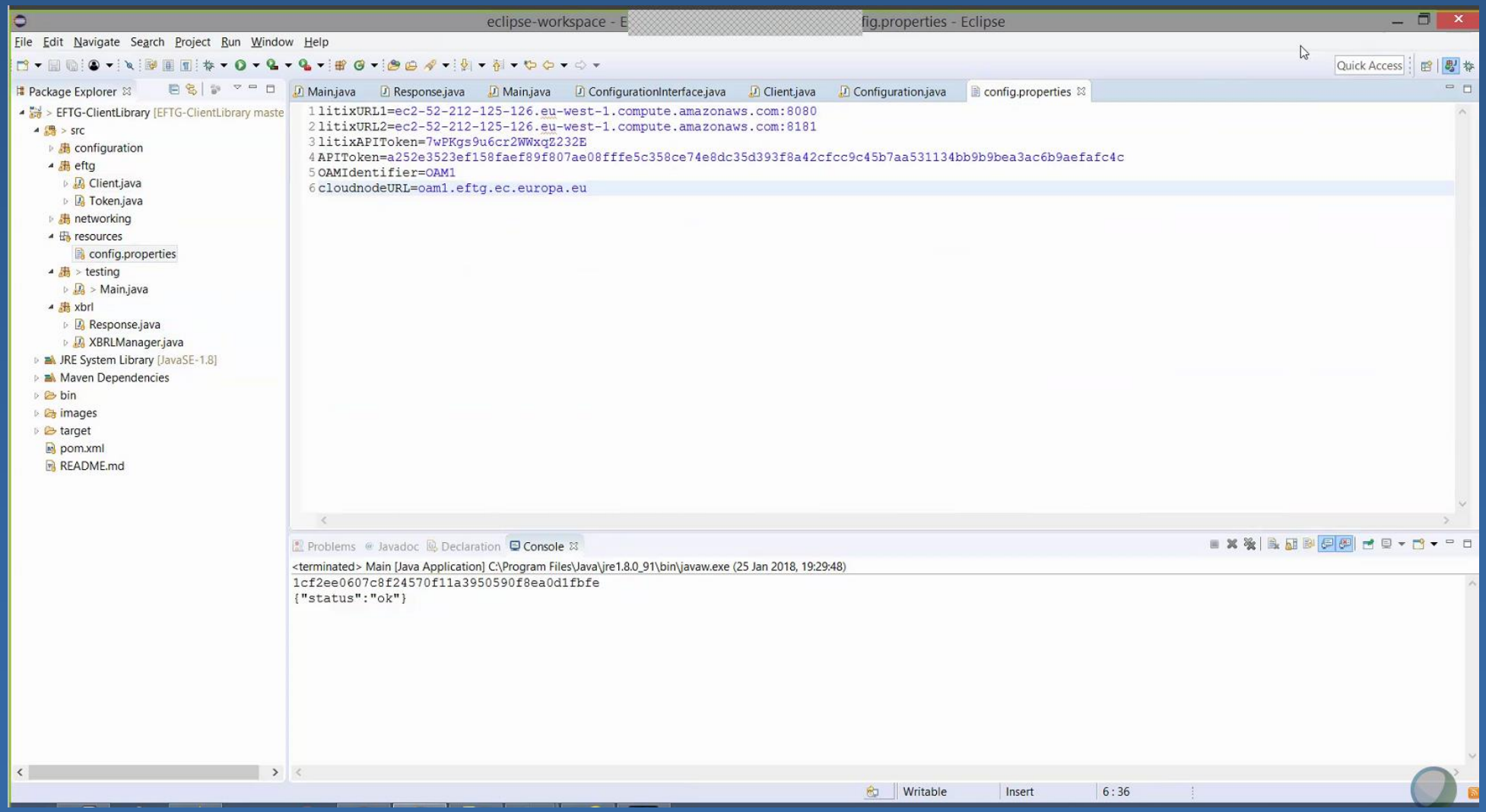
OAM can then obtain API keys required for submission onto the DLT

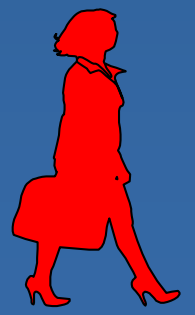




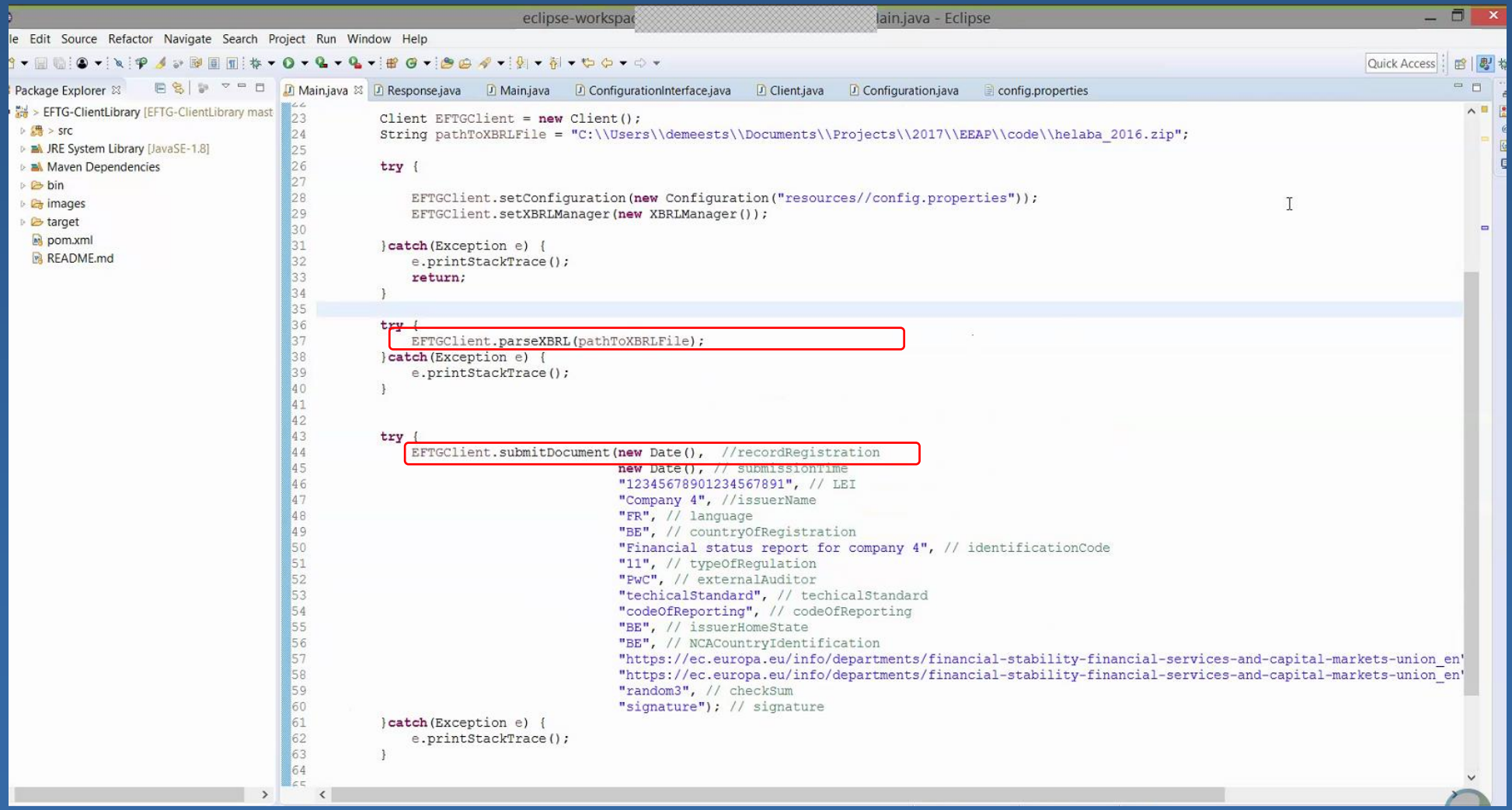
OAM config file

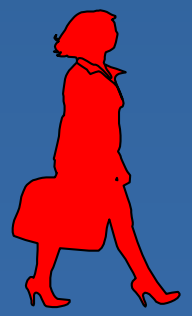
To specify the API key





OAM iXBRL parsing & report submission

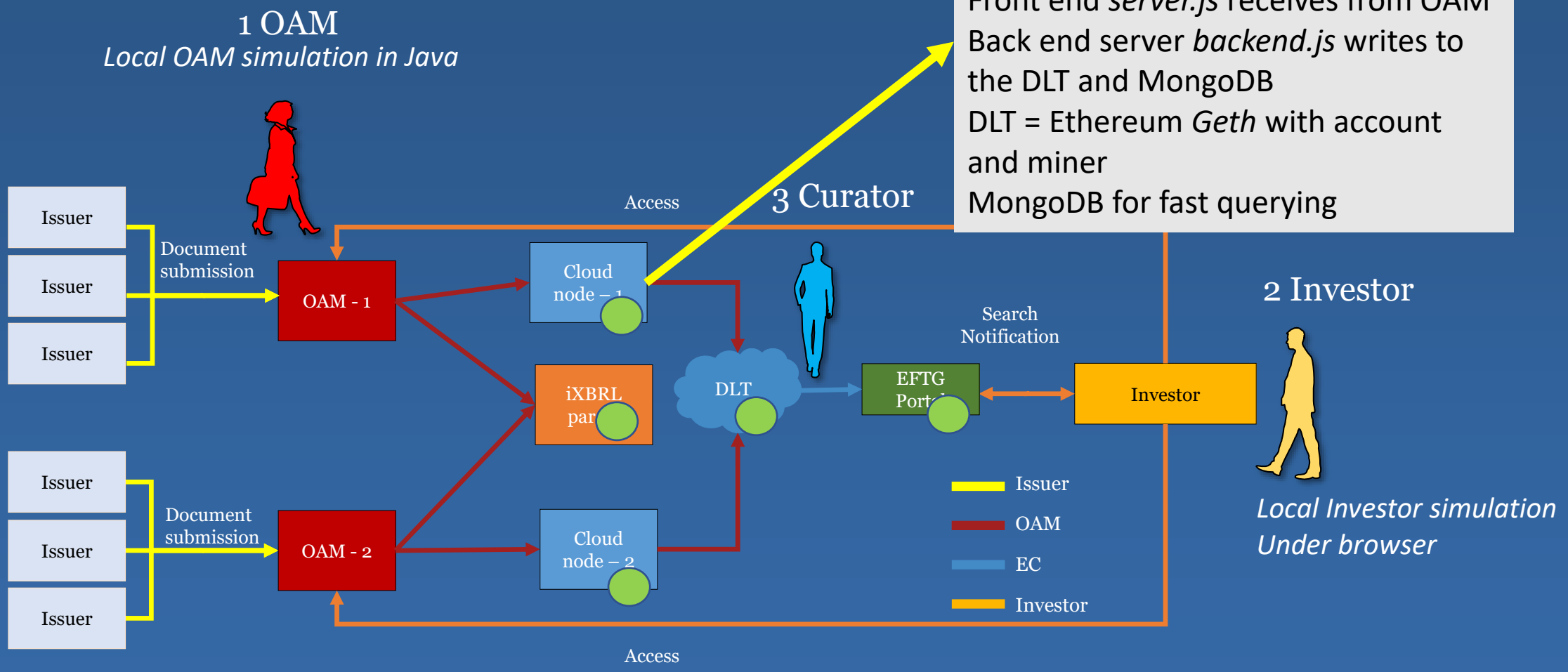




DLT cloud node

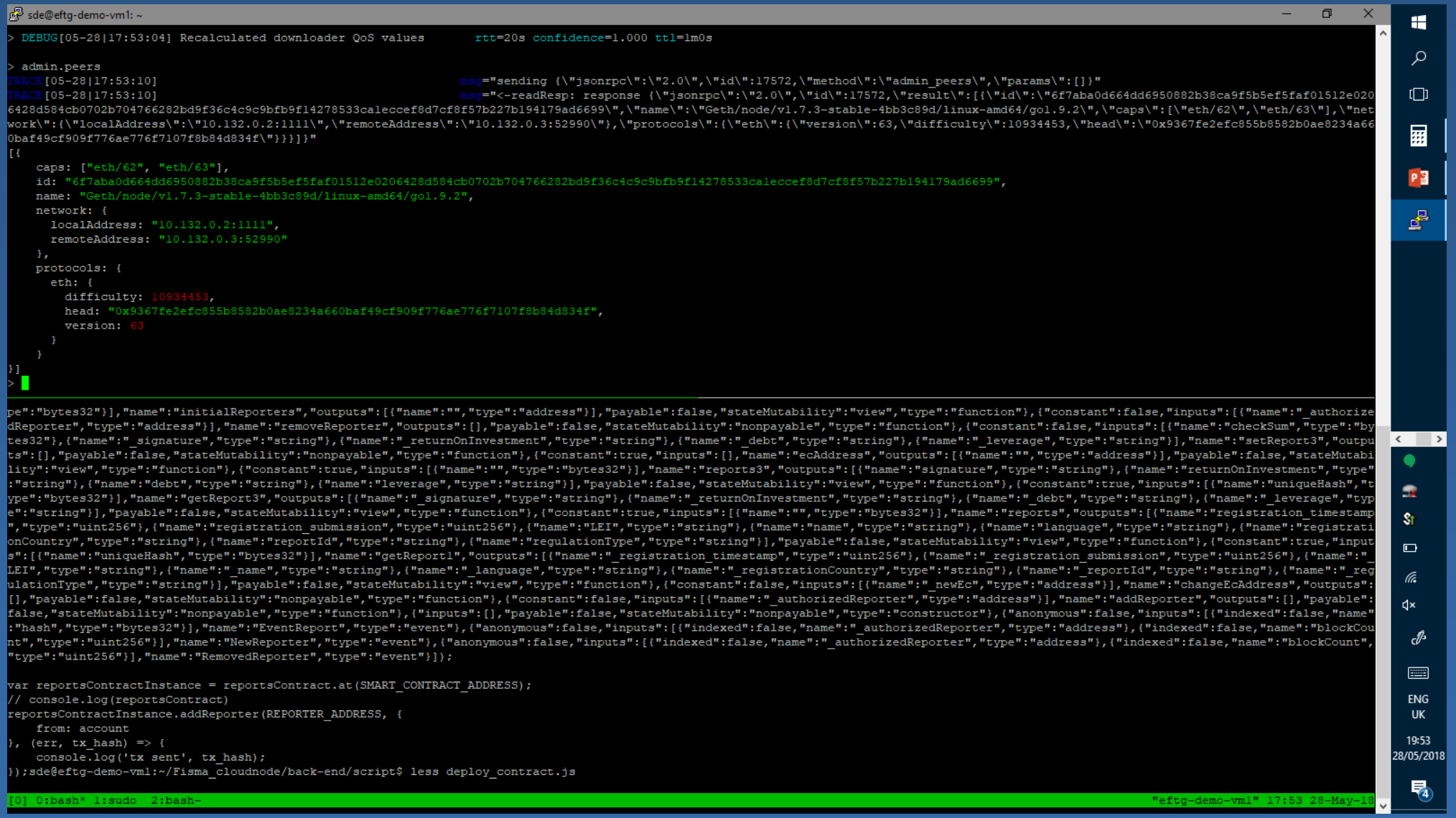
FISMA Cloud node
Runs the Ethereum smart contracts

Front end *server.js* receives from OAM
Back end server *backend.js* writes to the DLT and MongoDB
DLT = Ethereum *Geth* with account and miner
MongoDB for fast querying



XBRL files from https://www.esma.europa.eu/field-test-esef

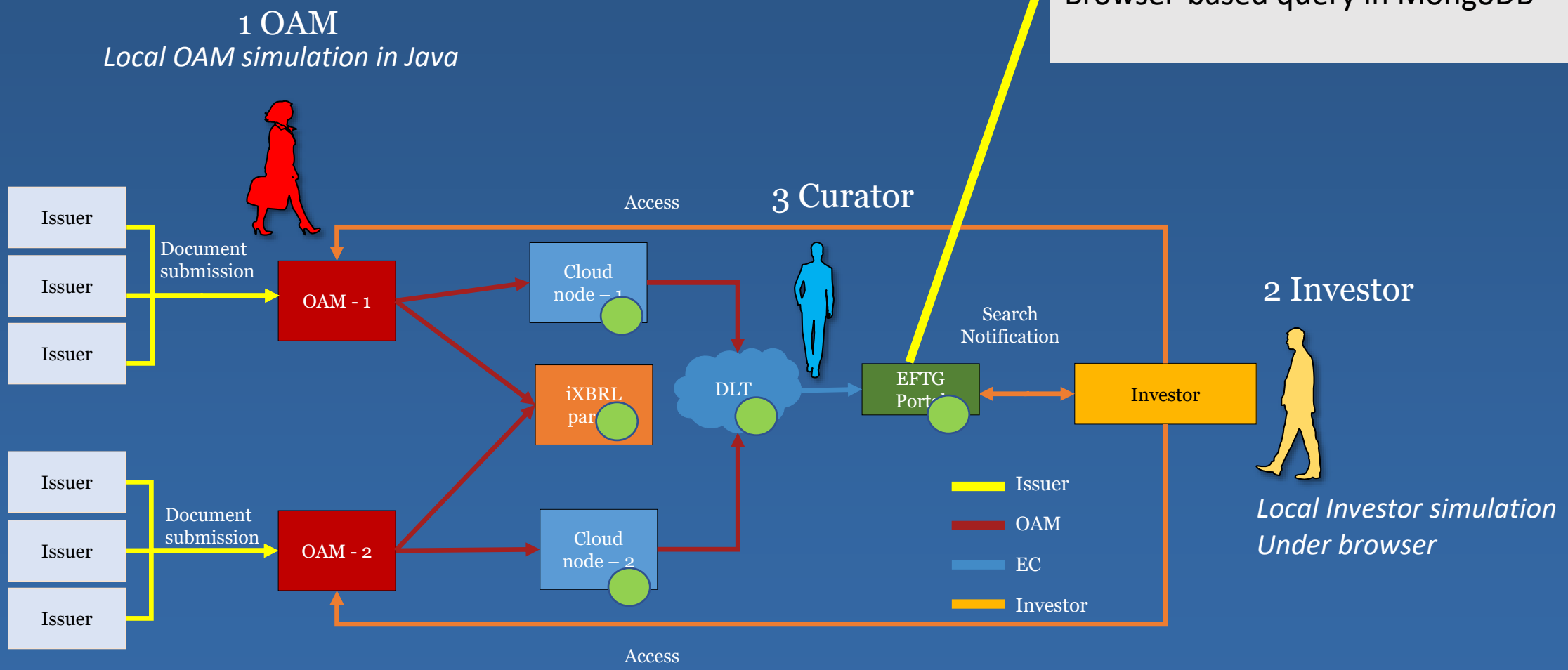
DLT cloud node



Investor

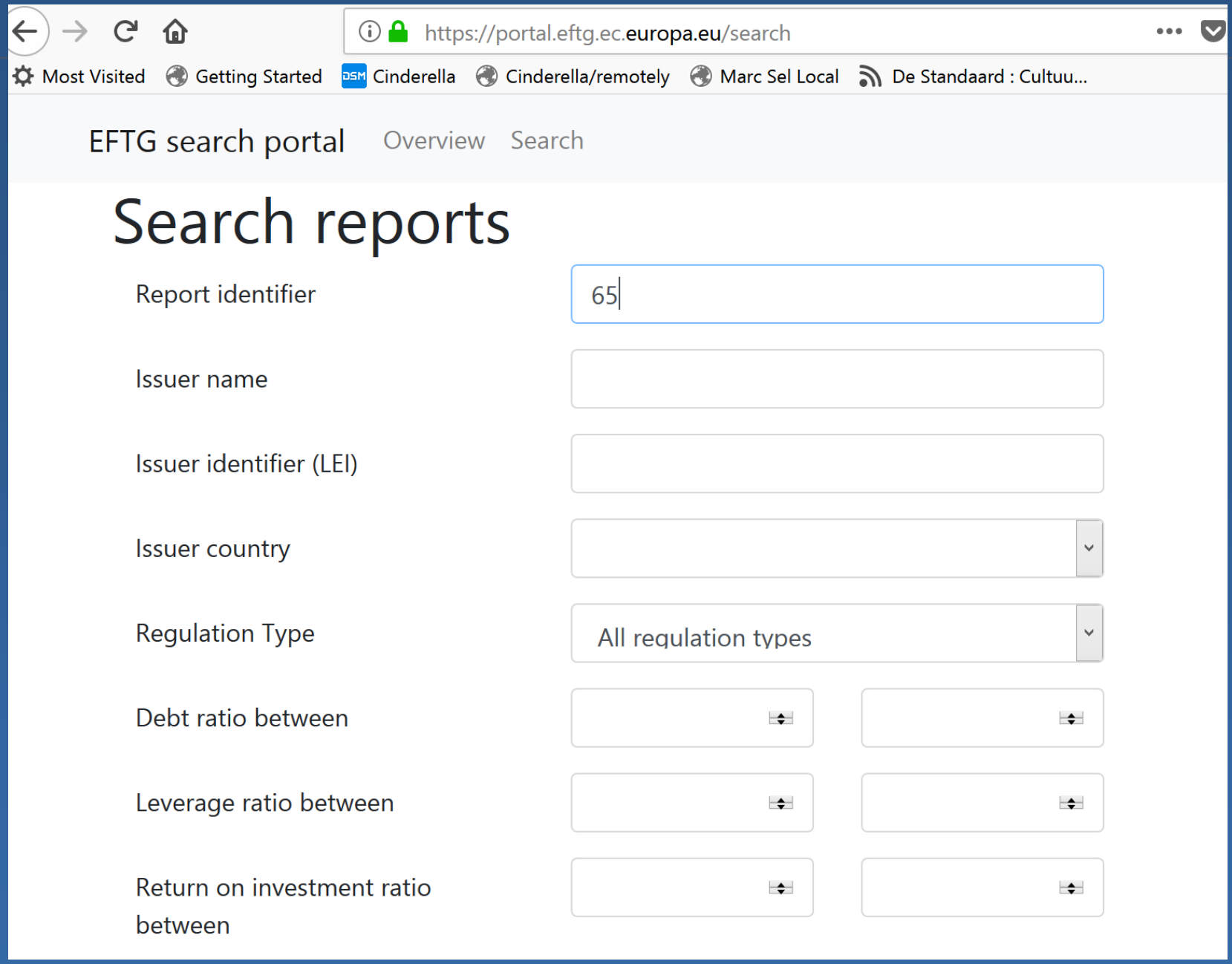
EFTG Portal
Allows investors to query

Browser-based query in MongoDB



XBRL files from https://www.esma.europa.eu/field-test-esef

Search


https://portal.eftg.ec.europa.eu/search
Most Visited
Getting Started
Cinderella
Cinderella/remotely
Marc Sel Local
De Standaard : Cultuu...
EFTG search portal
Overview
Search
Search reports
Report identifier
65
Issuer name
Issuer identifier (LEI)
Issuer country
Regulation Type
All regulation types
Debt ratio between
Leverage ratio between
Return on investment ratio between

EFTG search portal Overview Search

Overview of reports

Submission date	Report ID	Issuer name	
Jan 25, 2018, 8:47:00 PM	65	Company 3	Download
Jan 25, 2018, 8:29:00 PM	64	Company 2	Download
Jan 25, 2018, 5:57:00 PM	63	Company 1	Download
Jan 25, 2018, 5:48:00 PM	63	Company 1	Download

Further references

- http://europa.eu/rapid/press-release_MEMO-18-1406_en.htm
- https://ec.europa.eu/info/departments/financial-stability-financial-services-and-capital-markets-union_en
- https://www.pwc.be/blockchain
- http://www.marcsel.eu