Extended services for IPOPO

Summary

- iPOPO
- Goals of the project
- iPOPO remote shell
- Design of the PKI module
- Implementation of the PKI
- Results of the project
- Future of the project

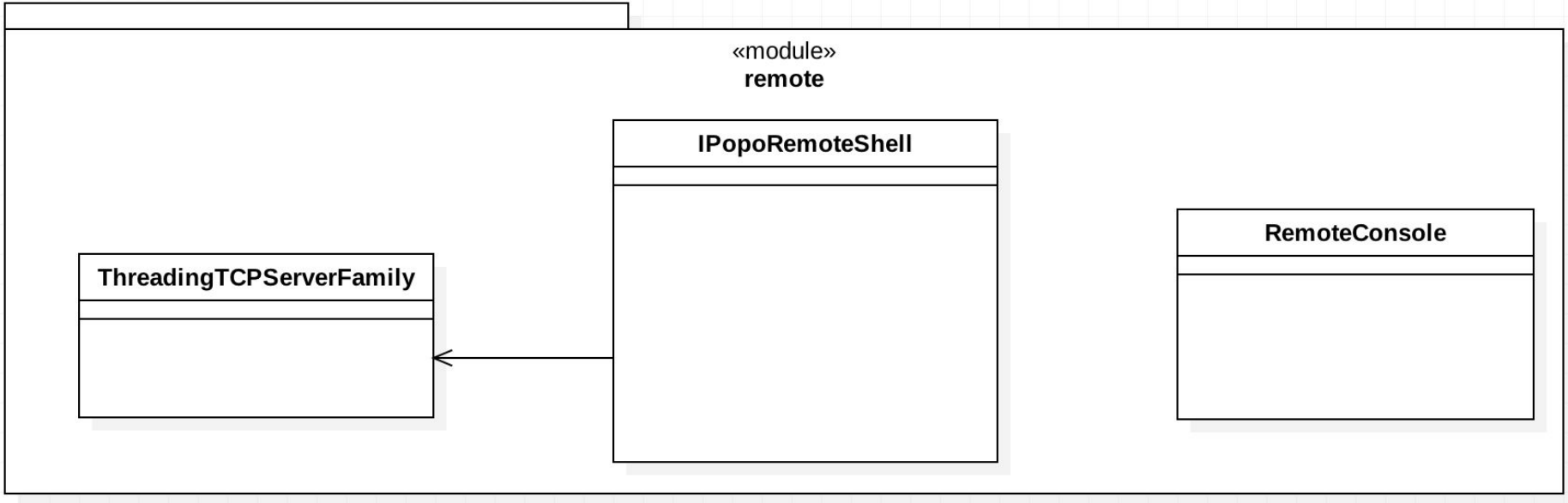
iPOPO

- OpenSource project
- Component-based model
- Based on iPOJO and OSGi

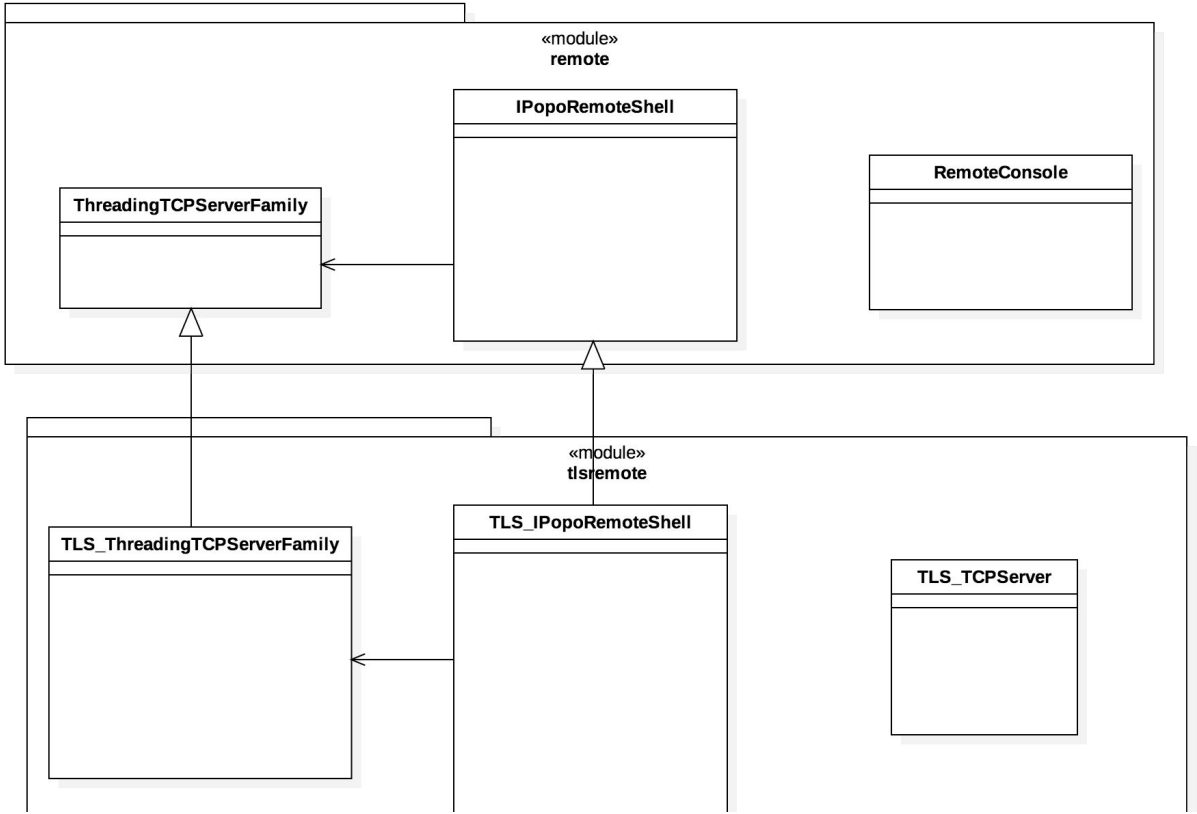
Goals of the project

- Encryption of communications
- Mutual authentication
- Handling of sets of certificates

iPOPO Remote Shell



TLS Remote Shell

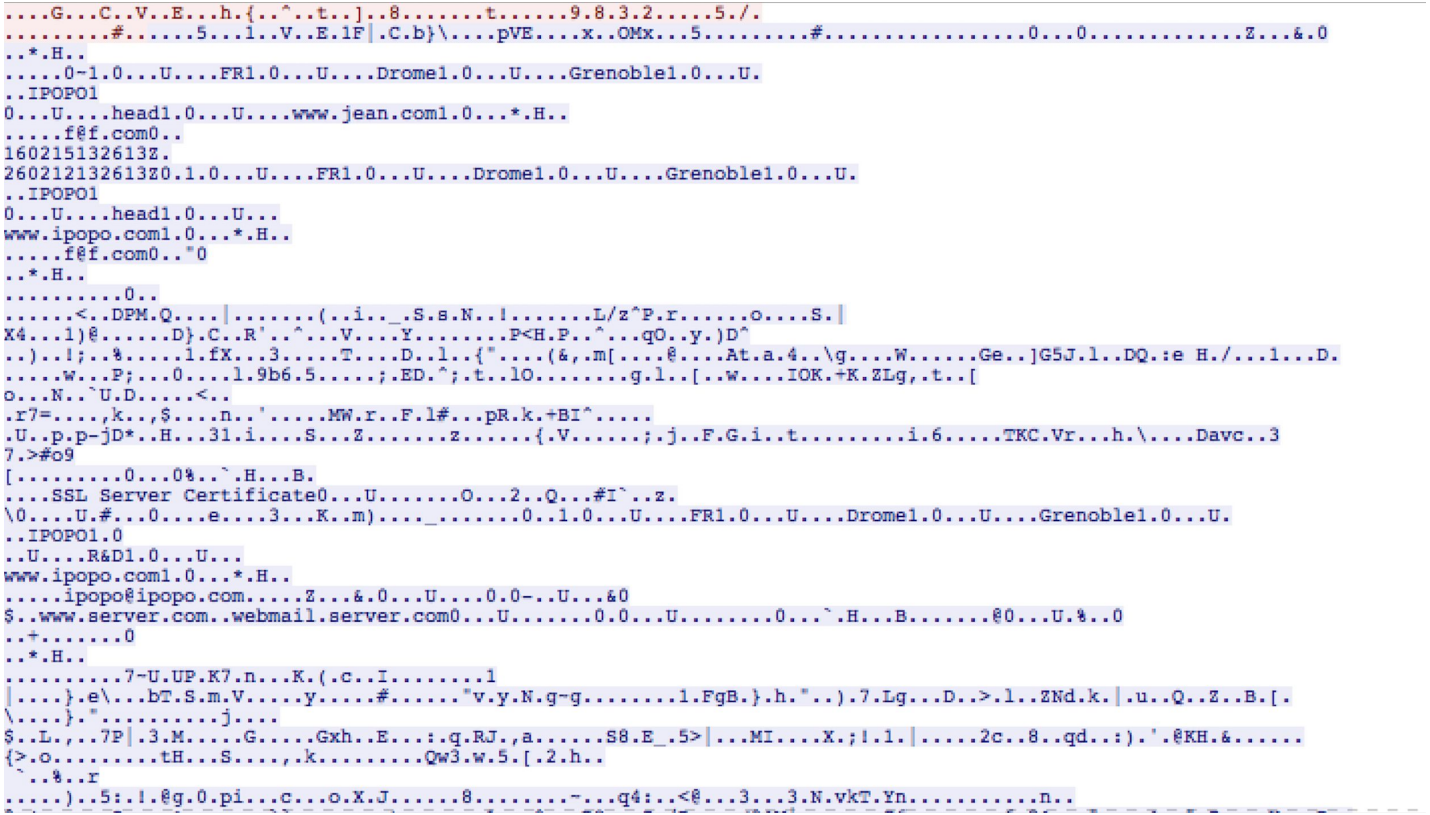


IPOPO Remote Client

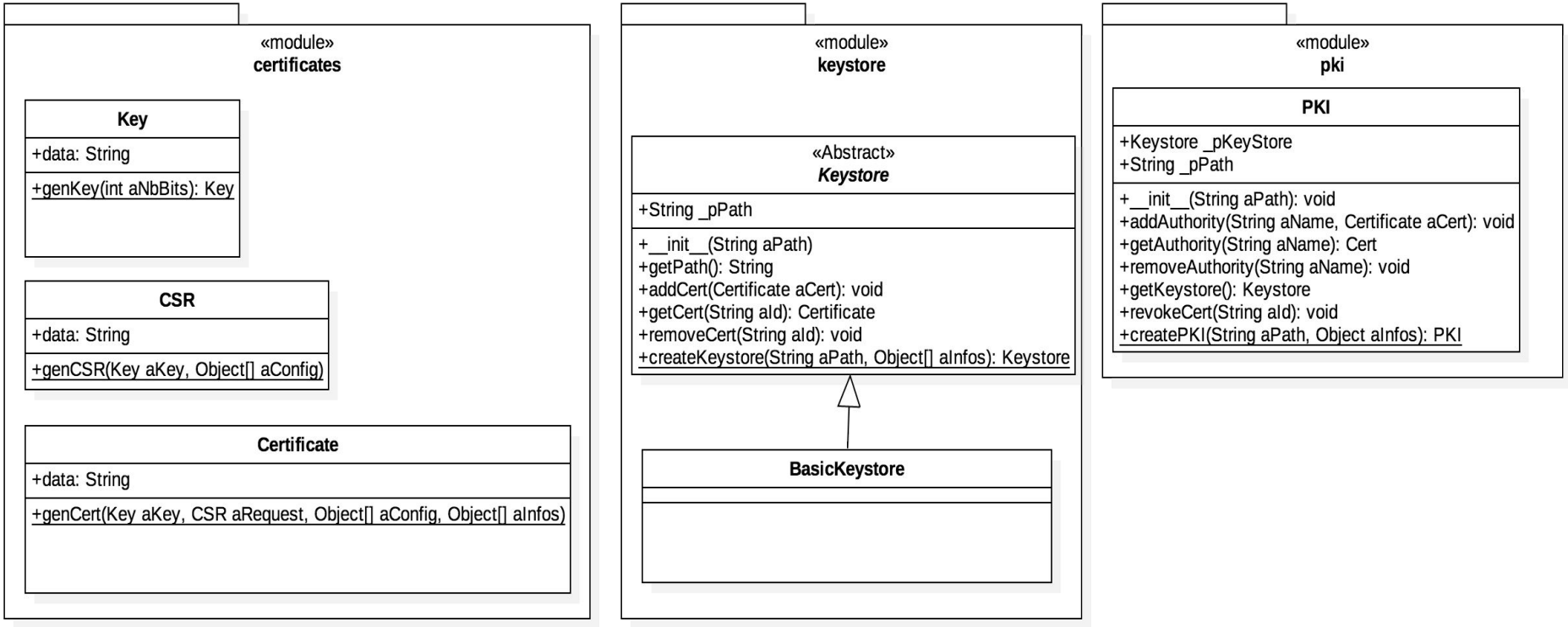
```
└─ ./client.py
====================
ADDRESS : 'localhost'
PORT : 9001
TLS : True
====================
--------------------------------------------------------------------------------
** Pelix Shell prompt **

iPOPO Remote Shell
--------------------------------------------------------------------------------
$
```

IPOPO Remote Shell



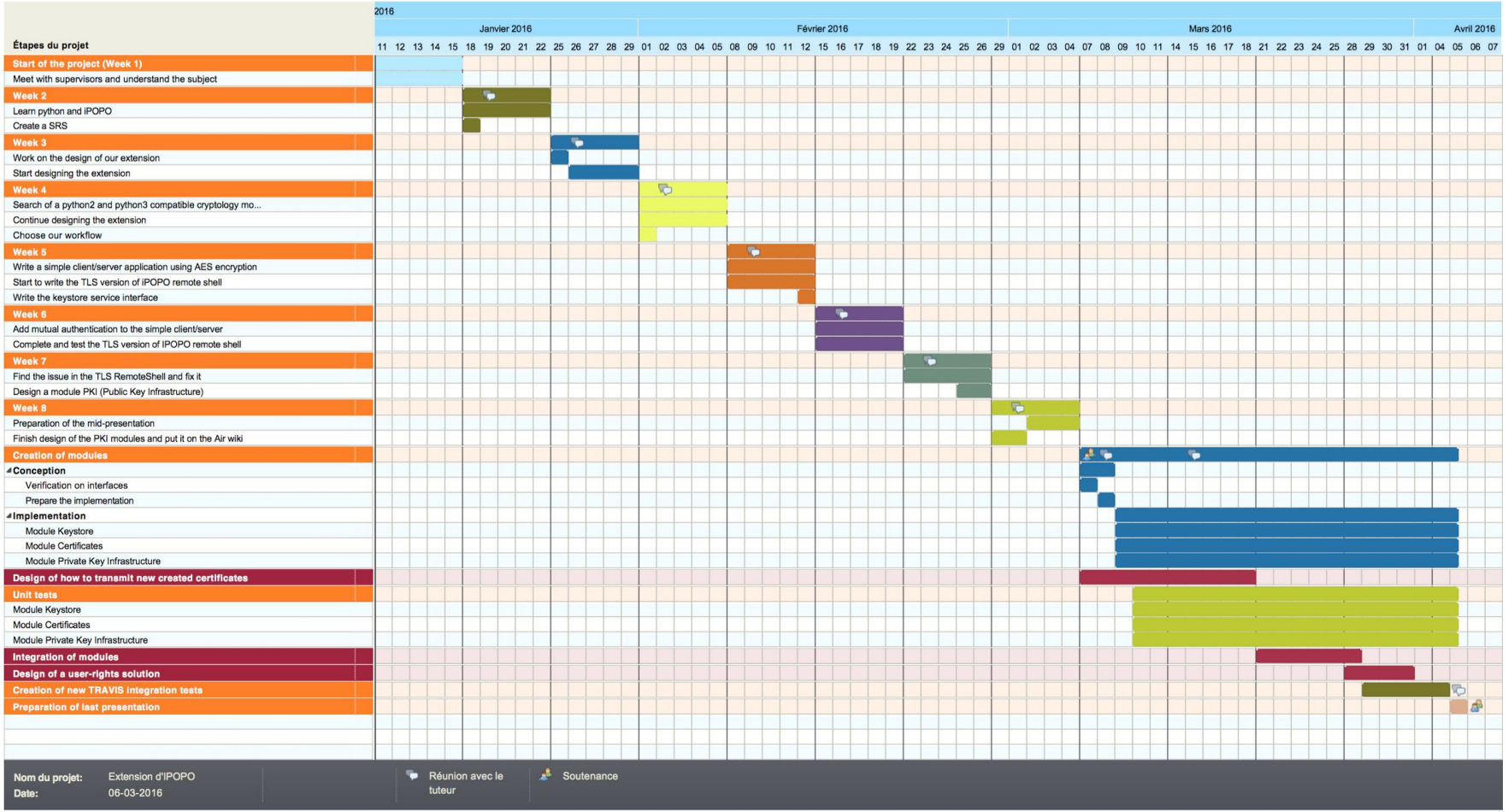
Design of the PKI



Implementation of PKI modules

PKI provides:

- Adding of authorities and certificates
- Revoking certificates
- Verifying certificates


2016
Janvier 2016
Février 2016
Mars 2016
Avril 2016
Étapes du projet
Start of the project (Week 1)
Meet with supervisors and understand the subject
Week 2
Learn python and iPOPO
Create a SRS
Week 3
Work on the design of our extension
Start designing the extension
Week 4
Search of a python2 and python3 compatible cryptology mo...
Continue designing the extension
Choose our workflow
Week 5
Write a simple client/server application using AES encryption
Start to write the TLS version of iPOPO remote shell
Write the keystore service interface
Week 6
Add mutual authentication to the simple client/server
Complete and test the TLS version of IPOPO remote shell
Week 7
Find the issue in the TLS RemoteShell and fix it
Design a module PKI (Public Key Infrastructure)
Week 8
Preparation of the mid-presentation
Finish design of the PKI modules and put it on the Air wiki
Creation of modules
Conception
Verification on interfaces
Prepare the implementation
Implementation
Module Keystore
Module Certificates
Module Private Key Infrastructure
Design of how to transmit new created certificates
Unit tests
Module Keystore
Module Certificates
Module Private Key Infrastructure
Integration of modules
Design of a user-rights solution
Creation of new TRAVIS integration tests
Preparation of last presentation
Nom du projet: Extension d'IPOPO
Date: 06-03-2016
Réunion avec le tuteur
Soutenance

Future of the project

- Finish/Rewrite PKI module
- Write iPOPO shell integration module
- Integrate TLS Remote with PKI
- Pull Request

Thank you for your attention