

Exploring Blockchain Technology to Improve Multi-Party Relationship in Business Process Management Systems

Paulo Henrique Alves
ph.alves@les.inf.puc-rio.br
Laboratory of Software Engineering @ PUC-Rio

Summary

- Introduction
- Background
- Related Work
- BPMS Comparison
- Proposed Solution
- Use Case
- Conclusions and Future Work

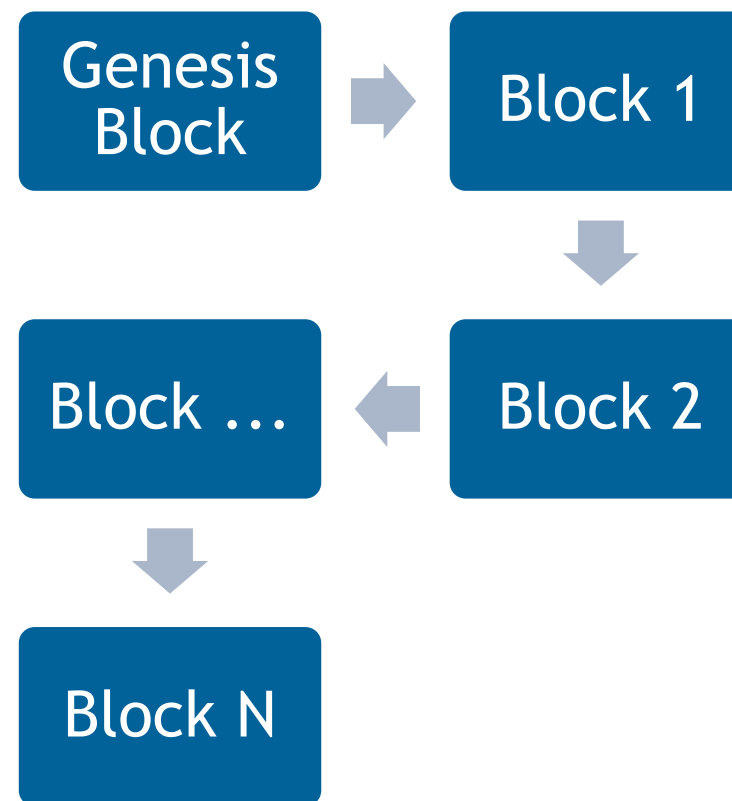
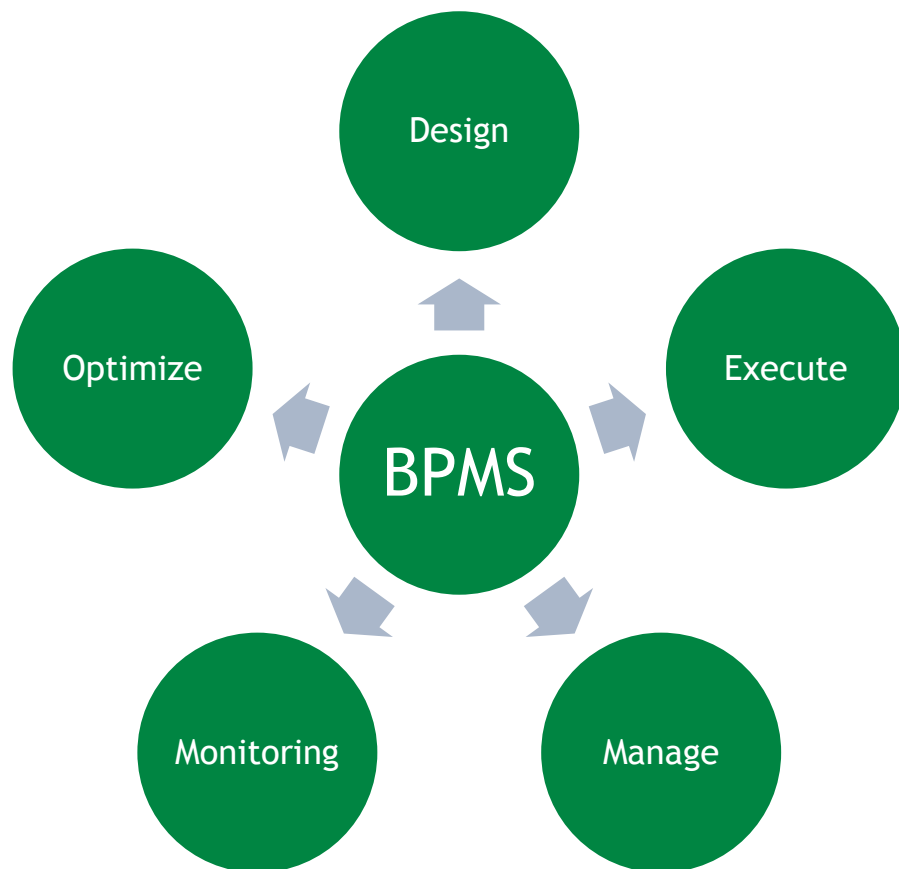
Introduction



Source: https://lupusconsulting.com/wp-content/uploads/2017/10/07G_Process_Orchestration.png

Source: Icons made by <https://www.flaticon.com/authors/freepik> title="Freepik"

Background



Related Work

Main topics

- Blockchain challenges and opportunities in the BPM context (Mendling et al., 2018; Viriyasitavat et al., 2018);
- Business Process Modeling Notation Systems integration with BCT to redesign **governance** (García-Bañuelos et al., 2017; López-Pintado et al., 2019; Weber et al., 2016; Di Ciccio et al., 2019);
- BPM traceability using blockchain (Viriyasitavat et al., 2018);
- BPMS tools (Meidan et al., 2017; Garcês et al., 2009) ;
- BPMN usage for BSC modelling and execution. (Prybila et al., 2017; Meroni et al., 2019).

BPMS Platforms Comparison

Tool/ Feature	BPMN	Forms	OpenSource
Pipefy	NO	NO	NO
Wrike	NO	YES	NO
Monday.com	NO	YES	NO
Kissflow	YES	YES	NO
Integrity	YES	NO	NO
Joget	NO	YES	YES
YAWL	NO	YES	YES
Bonita	YES	YES	YES
ProcessMaker	YES	YES	YES
Activiti	YES	YES	YES
jBPM	YES	YES	YES
Camunda	YES	YES	YES

Platforms comparison.

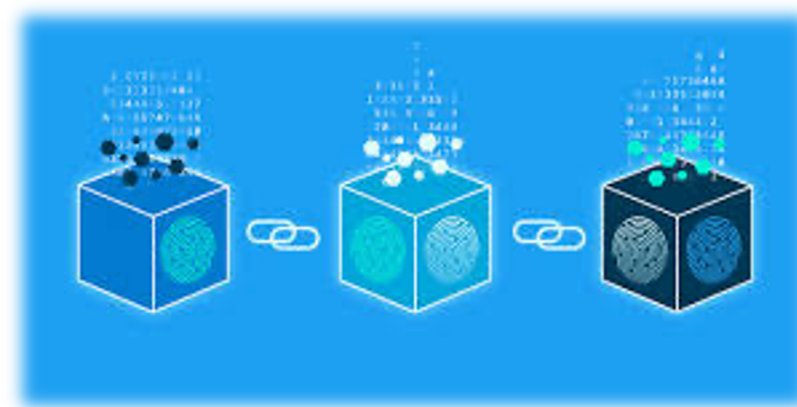
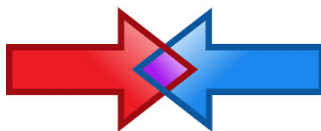
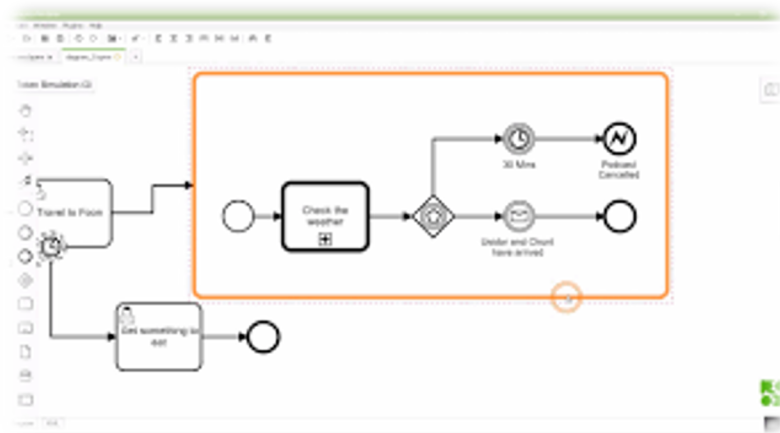
BPMS Platforms Comparison

Tool/ Feature	BPMN	Forms	OpenSource
Pipefy	NO	NO	NO
Wrike	NO	YES	NO
Monday.com	NO	YES	NO
Kissflow	YES	YES	NO
Integrity	YES	NO	NO
Joget	NO	YES	YES
YAWL	NO	YES	YES
Bonita	YES	YES	YES
ProcessMaker	YES	YES	YES
Activiti	YES	YES	YES
jBPM	YES	YES	YES
Camunda	YES	YES	YES



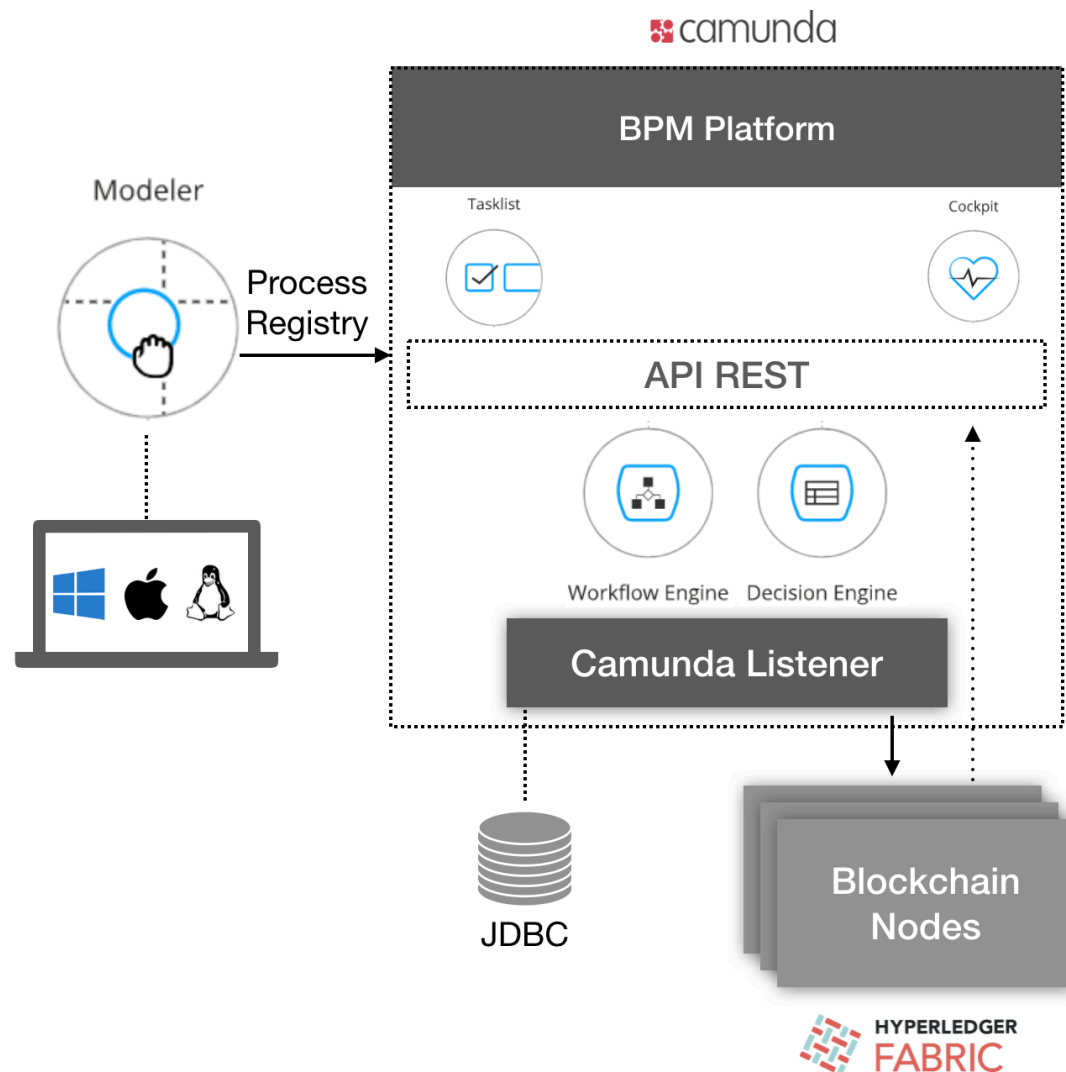
Platforms comparison.

Proposed Solution



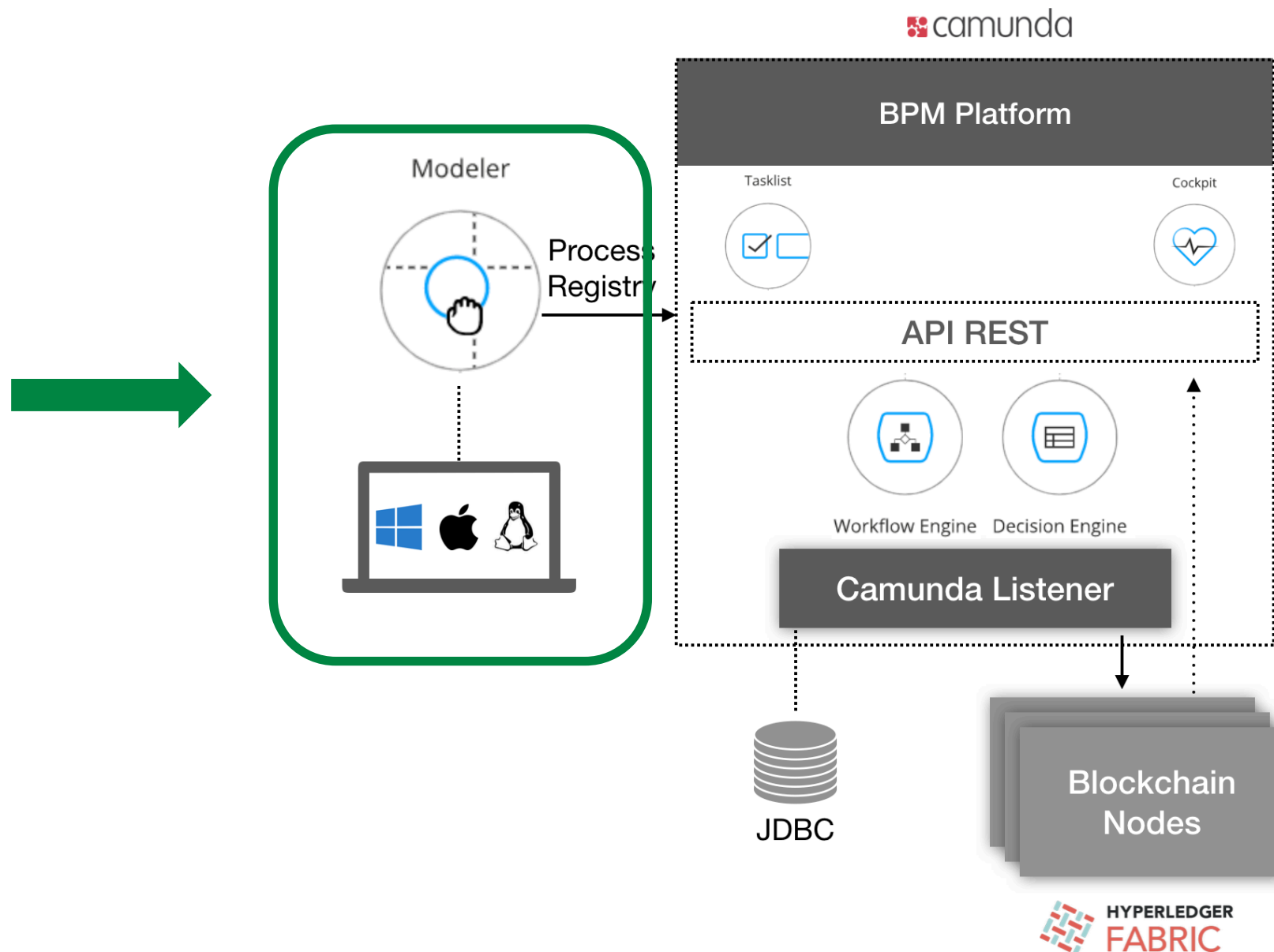
Source: <https://images.app.goo.gl/w18M2sP28yxk2wj1A>

Proposed Solution

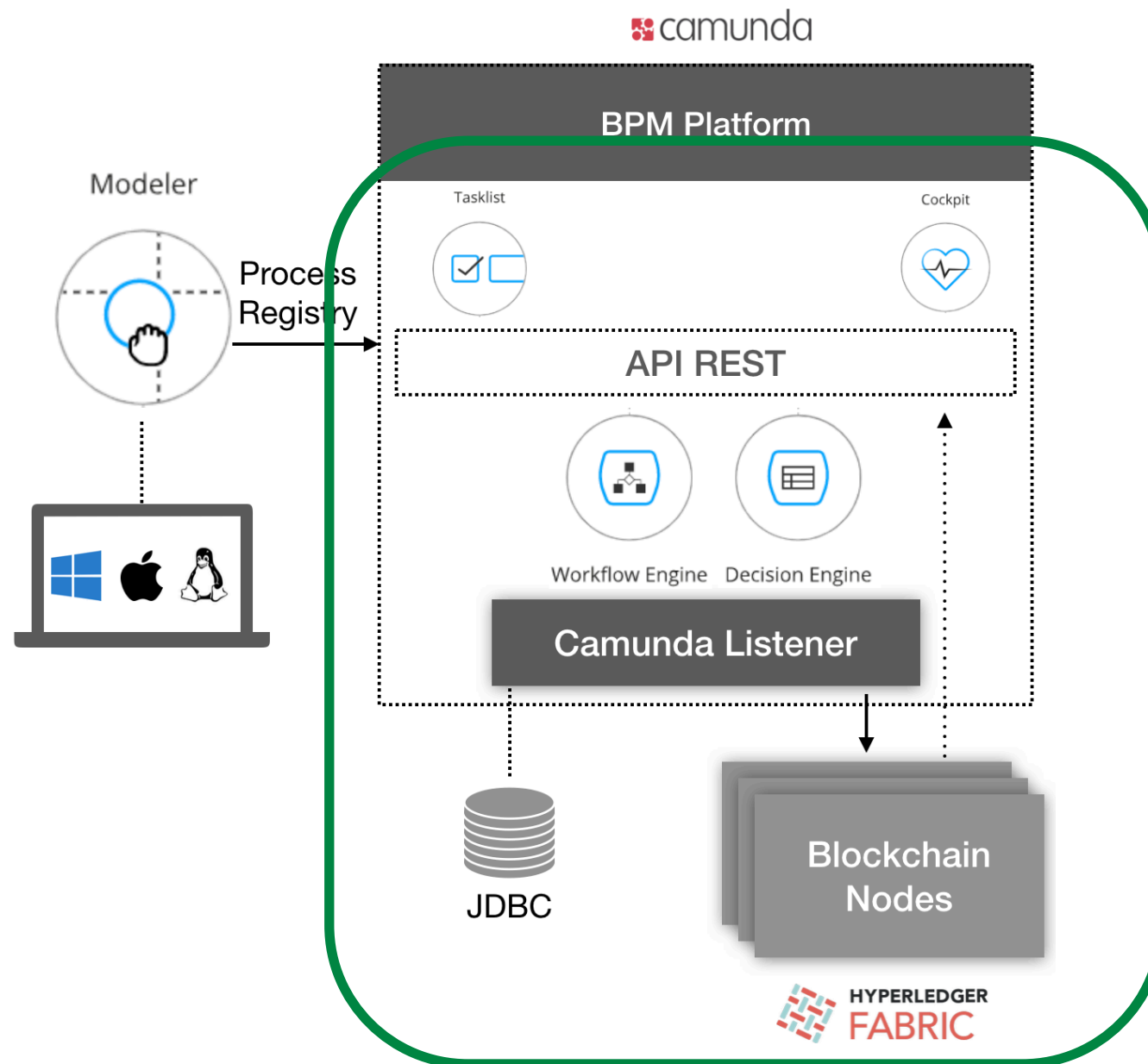


Distributed Business
Process System.

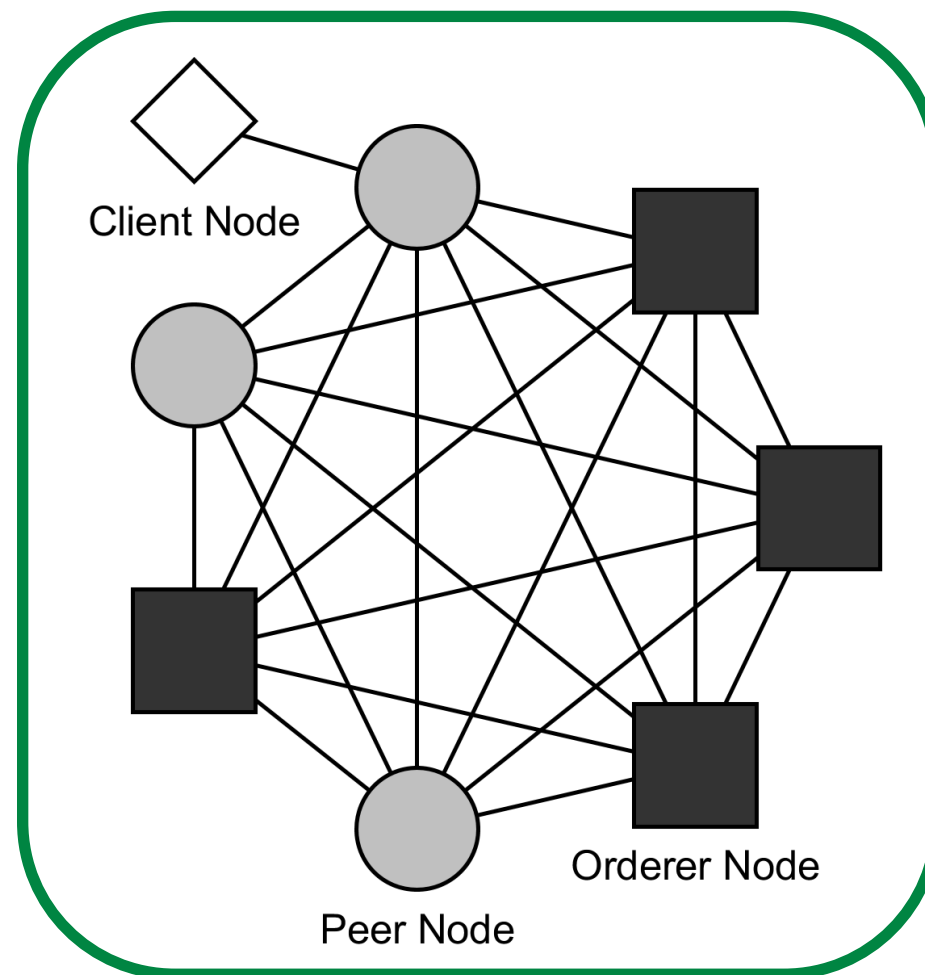
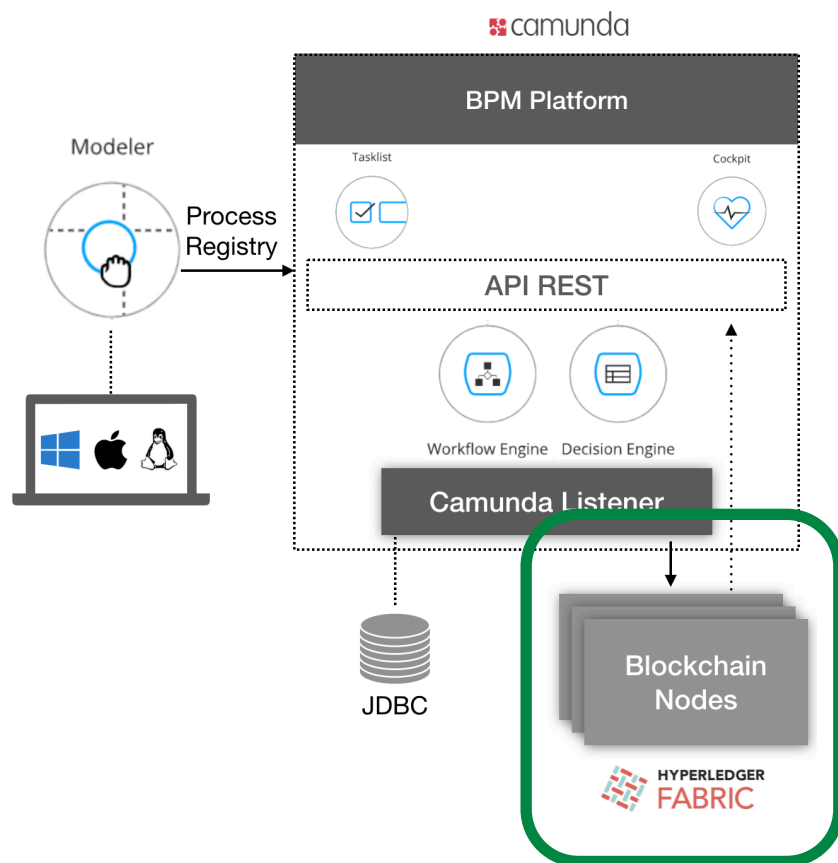
Proposed Solution



Proposed Solution

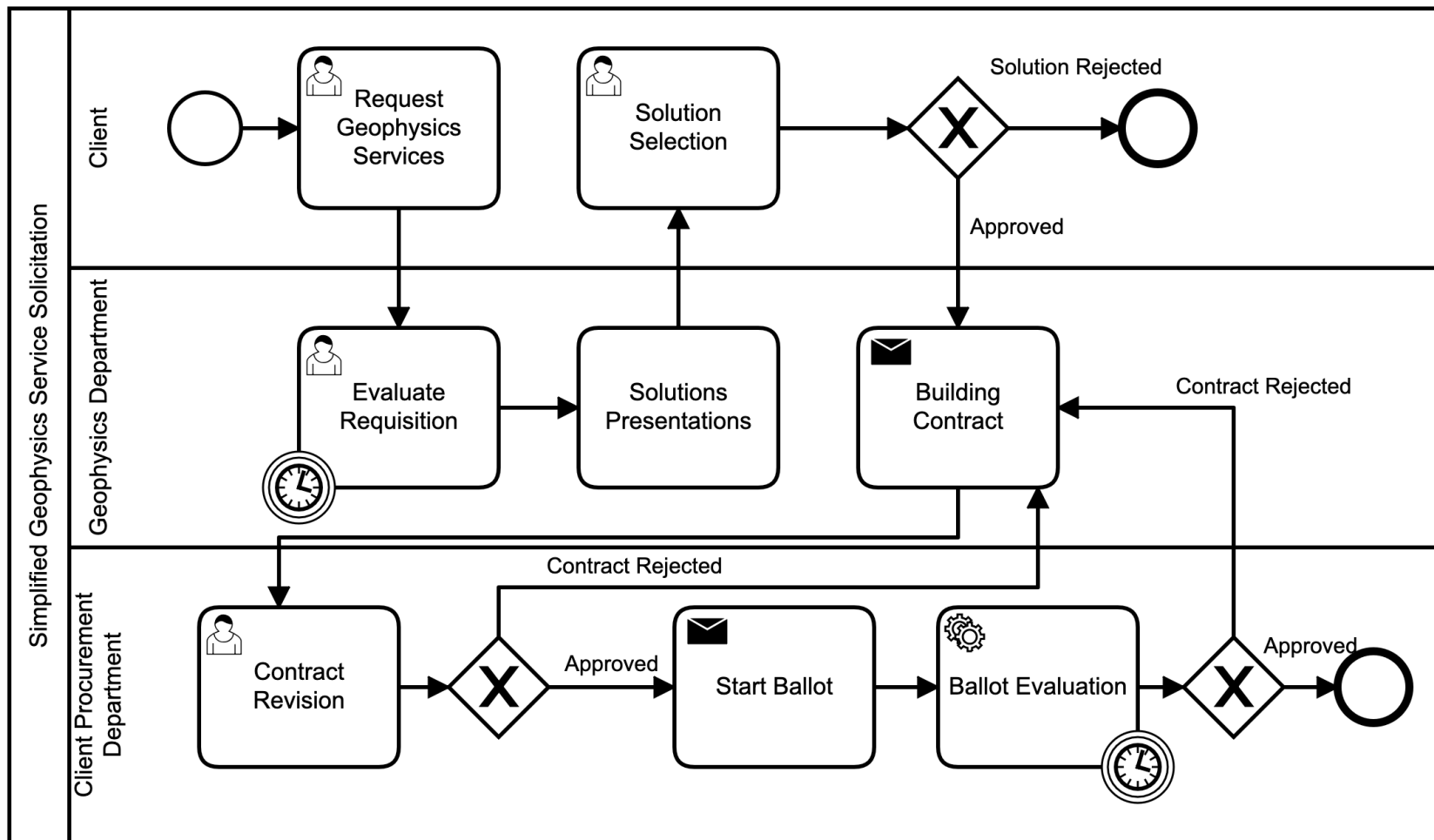


Proposed Solution



Hyperledger Fabric Macro-Architecture.

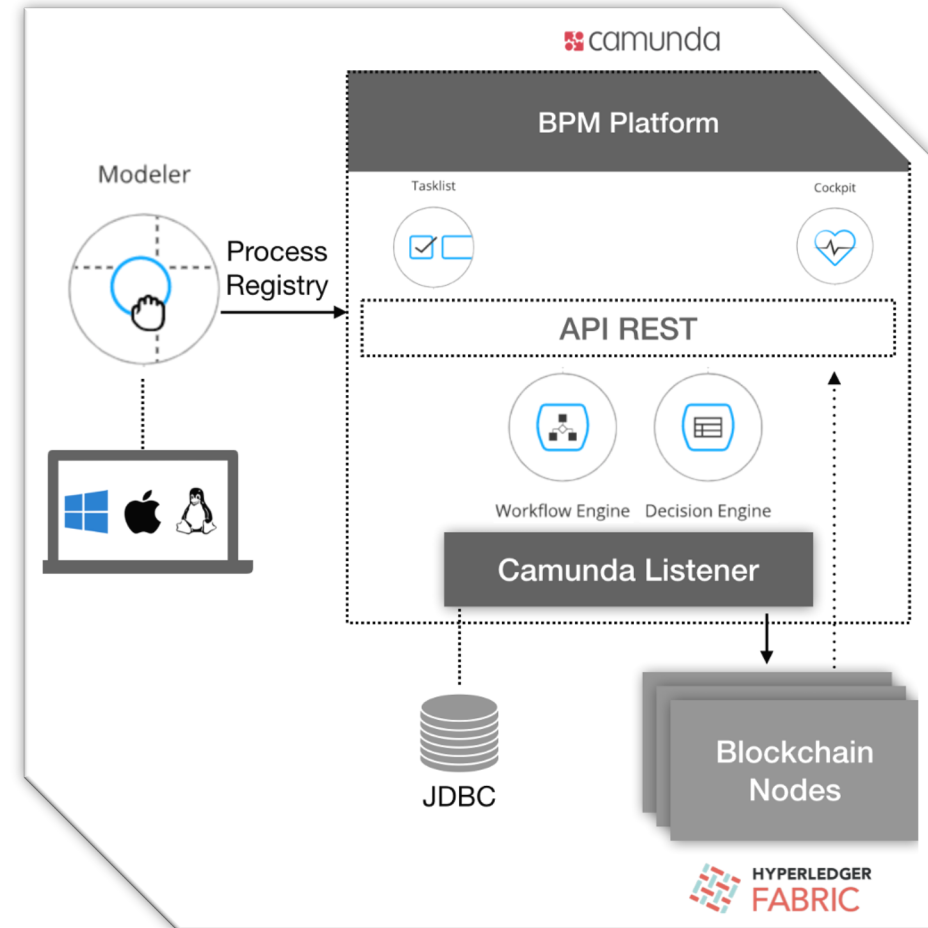
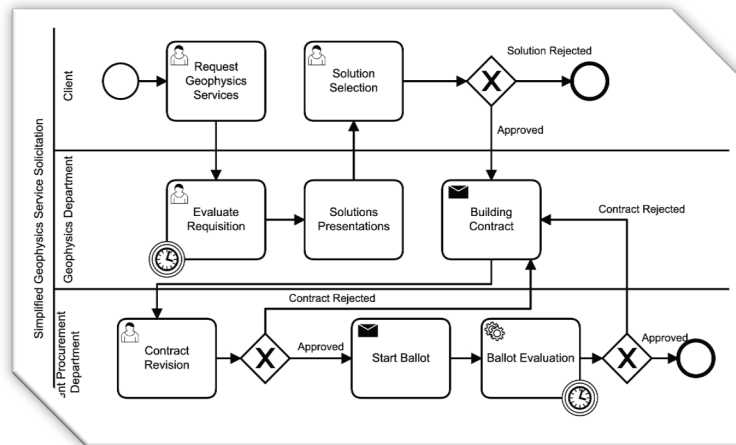
Use Case: Geophysics Data Acquisition



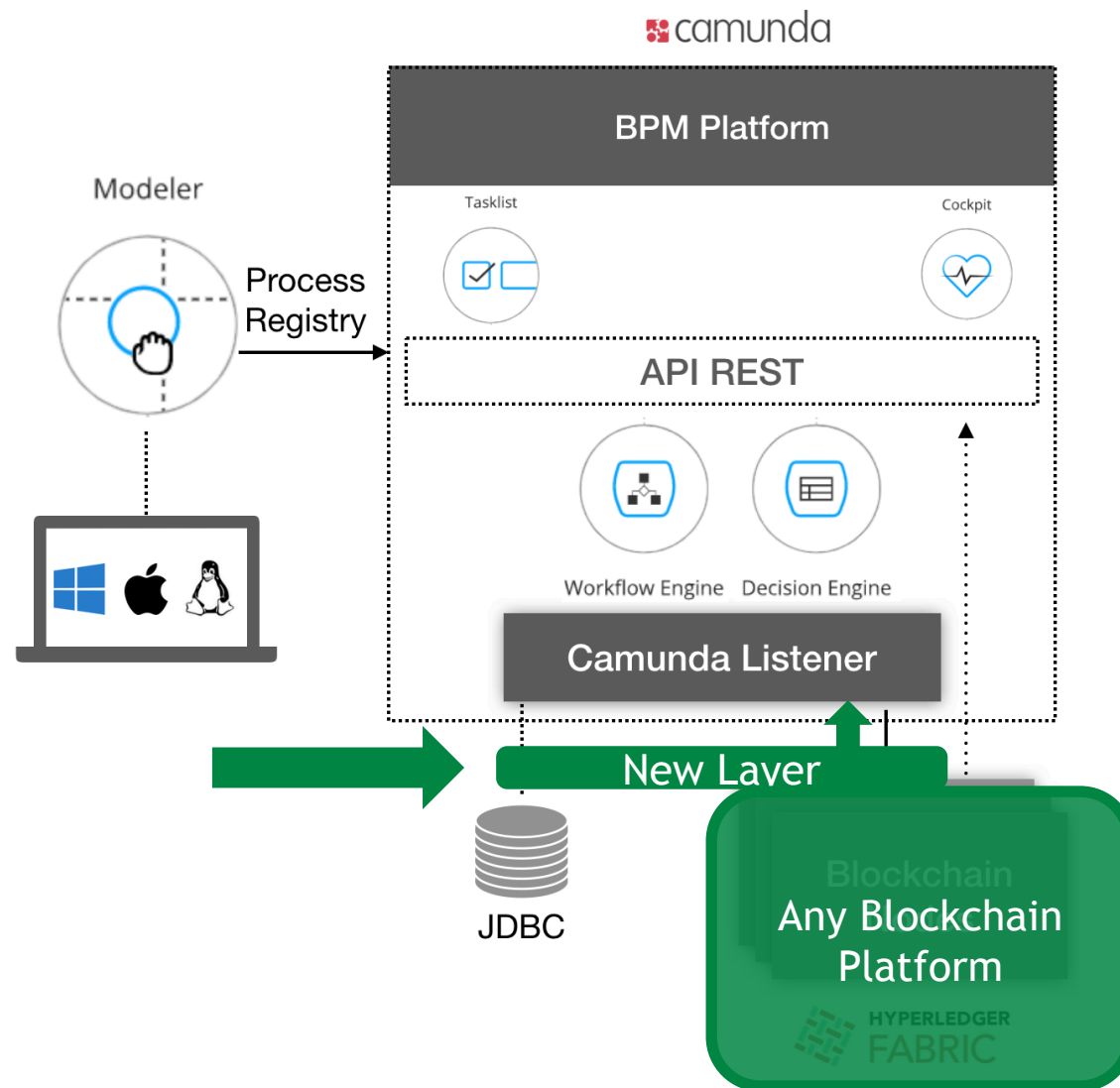
Simplified Geophysics Service Solicitation Process.

Conclusions and Future Work

Tool/ Feature	BPMN	Forms	OpenSo.
Pipefy	NO	NO	NO
Wrike	NO	YES	NO
Monday.com	NO	YES	NO
Kissflow	YES	YES	NO
Integrity	YES	NO	NO
Joget	NO	YES	YES
YAWL	NO	YES	YES
Bonita	YES	YES	YES
ProcessMaker	YES	YES	YES
Activiti	YES	YES	YES
jBPM	YES	YES	YES
Camunda	YES	YES	YES



Conclusions and Future Work



Thank you

Paulo Henrique Alves
ph.alves@les.inf.puc-rio.br
Laboratory of Software Engineering @ PUC-Rio

