e-PVP Modules
Blockchain for PVP

September 28, 2021

UPOV

International Union for the Protection of New Varieties of Plants

PREVIEW

- Context
- Proposed solution
- Challenges
- Timelines

Introduction

- Plant Variety Protection (PVP) applications are examined and granted by **authorities of members** of the International Union for the Protection of New Varieties of Plants (UPOV).
- UPOV is not a receiving office

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Goals

Digitalize the application process (filing, examination, Grant, renewal) : automate and make process easier to monitor by applicants and PVP offices

Notify applicants about any status change: improve communication and transparency within the process.

Integrate PVP Office business workflow: be flexible and be in line with each PVP Office practice

UPOV PRISMA must not become a monolith: **distributed architecture**

Meet each PVP office needs in terms of infrastructure (IAAS) and software (SAAS) : **distributed governance**

Distributed Ledgers
Benefits

- Efficient: Changes by any participant (PVP office) with the necessary permission to modify the ledger are immediately reflected in all copies of the ledger.
- Robust: in rejecting unauthorised changes, so corrupting the ledger is extremely difficult.
- Transparent : the full history can be seen by the different parties.

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Confidentiality is being implemented separately

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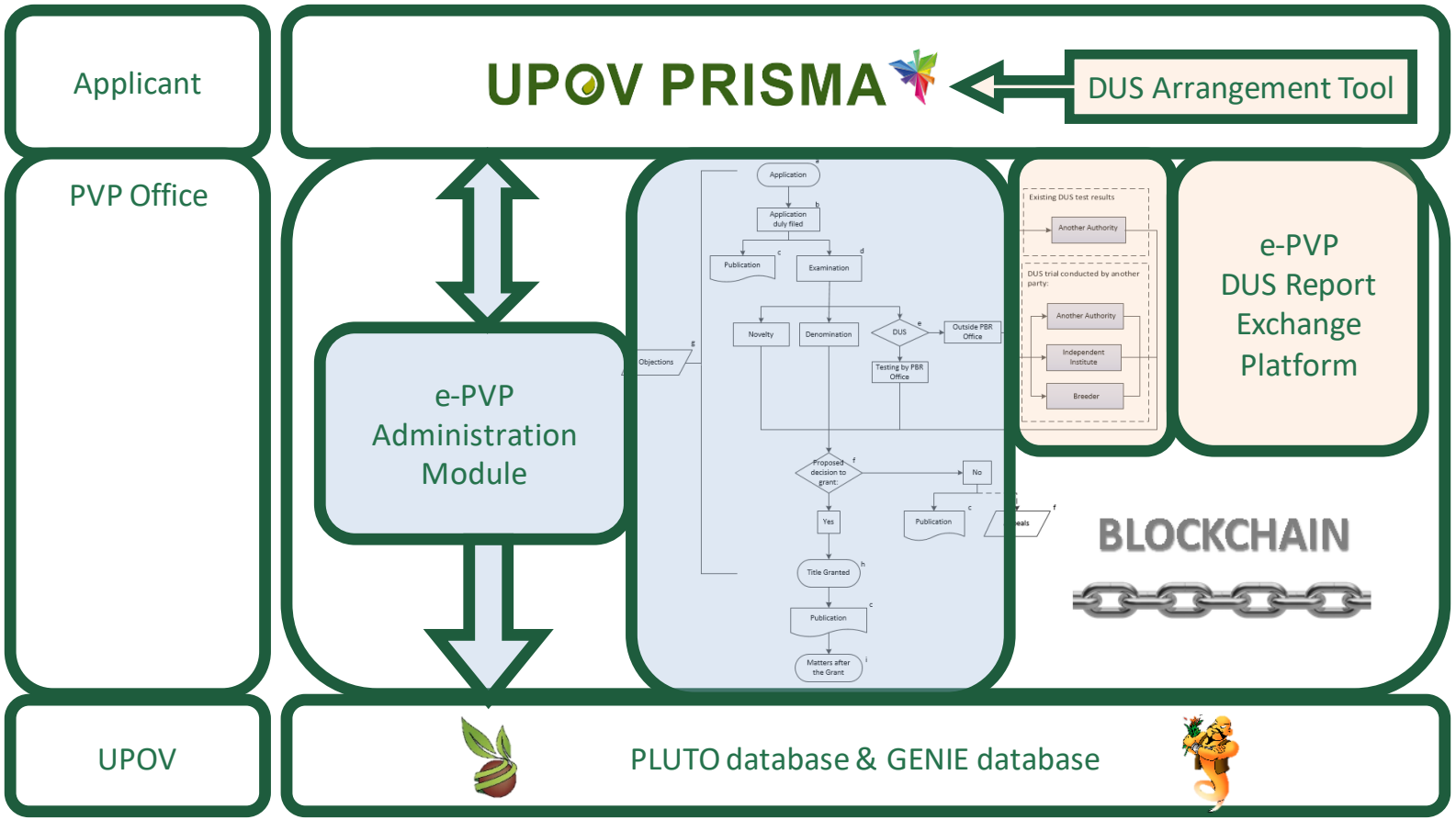
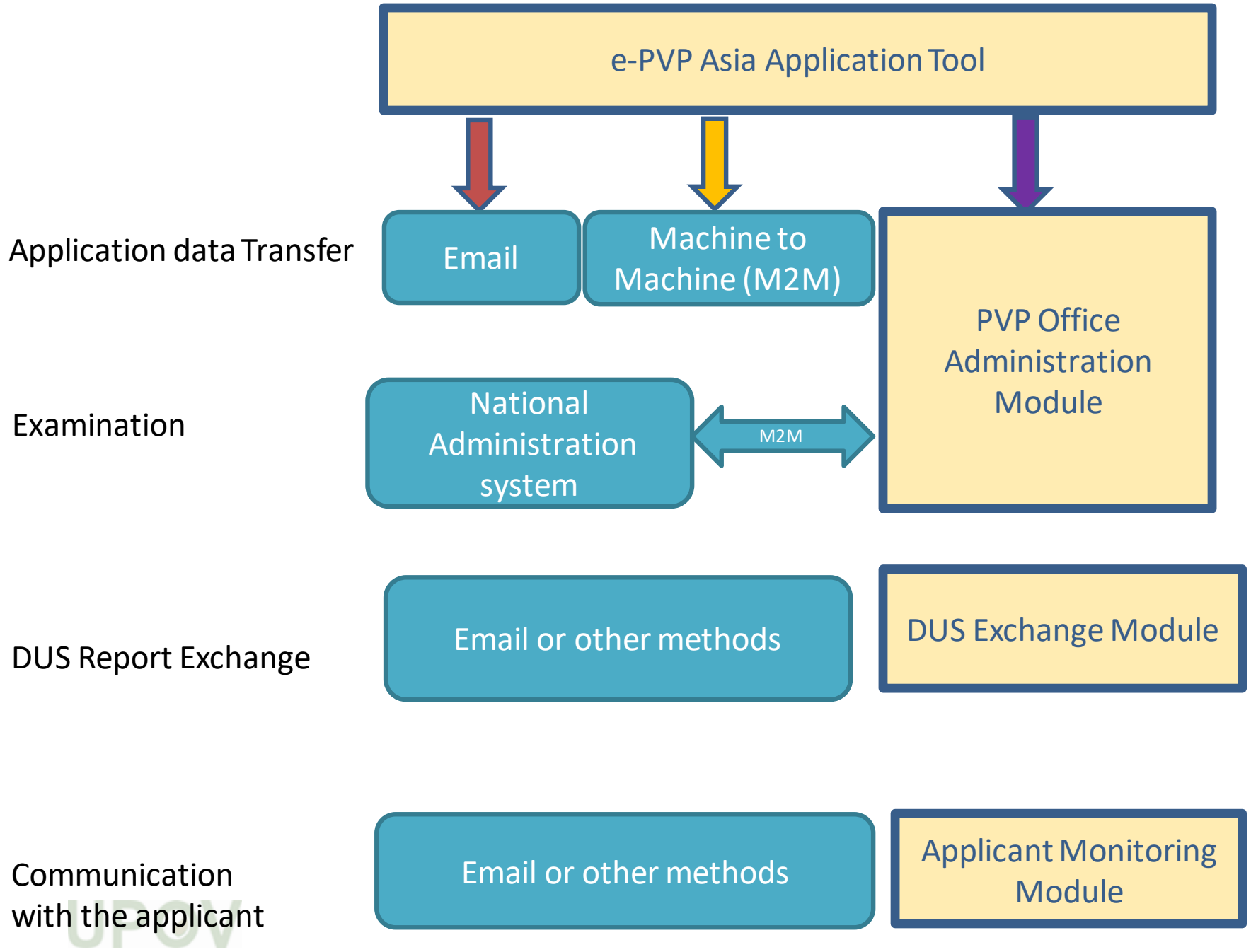
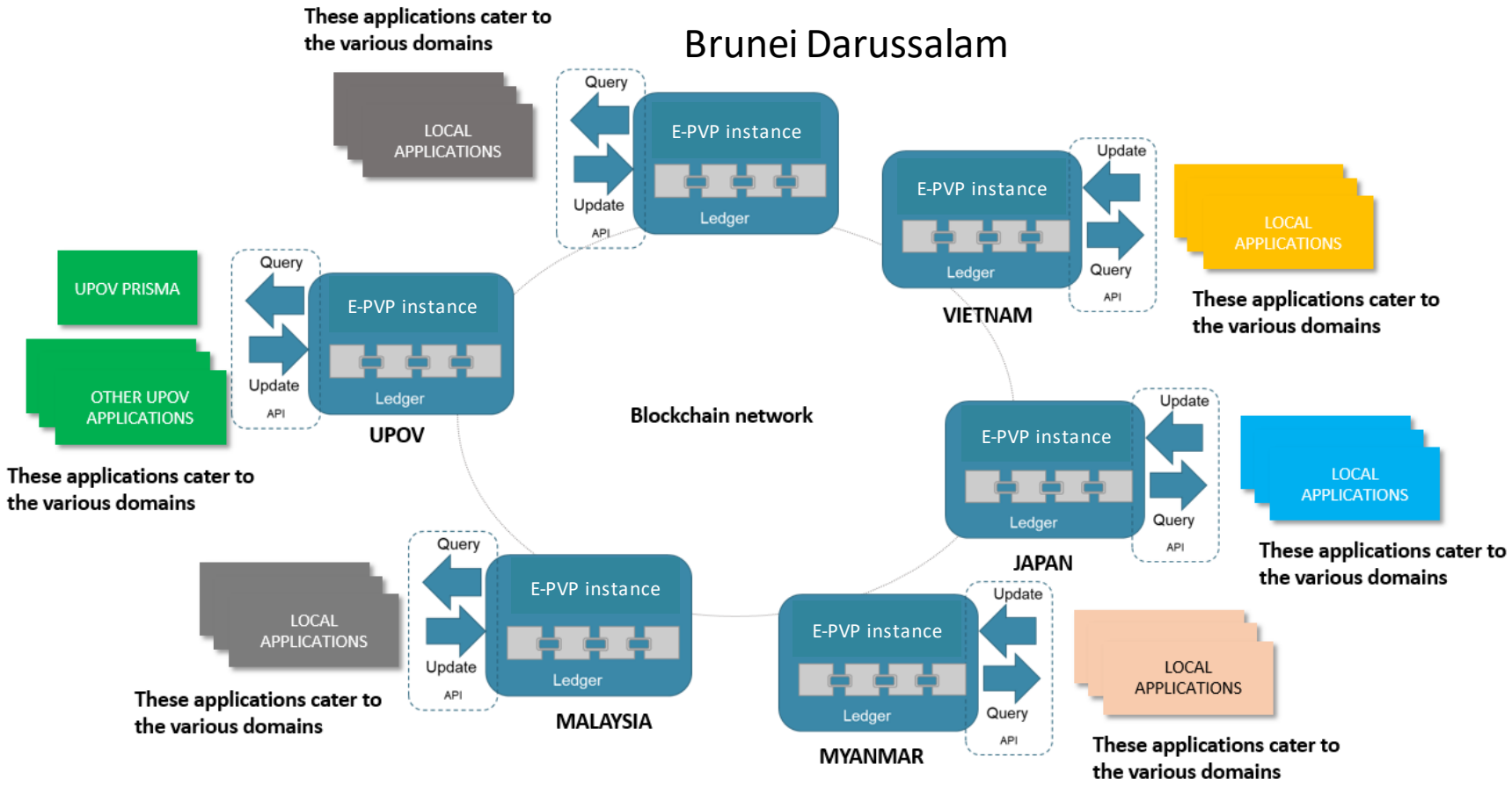
e-PVP

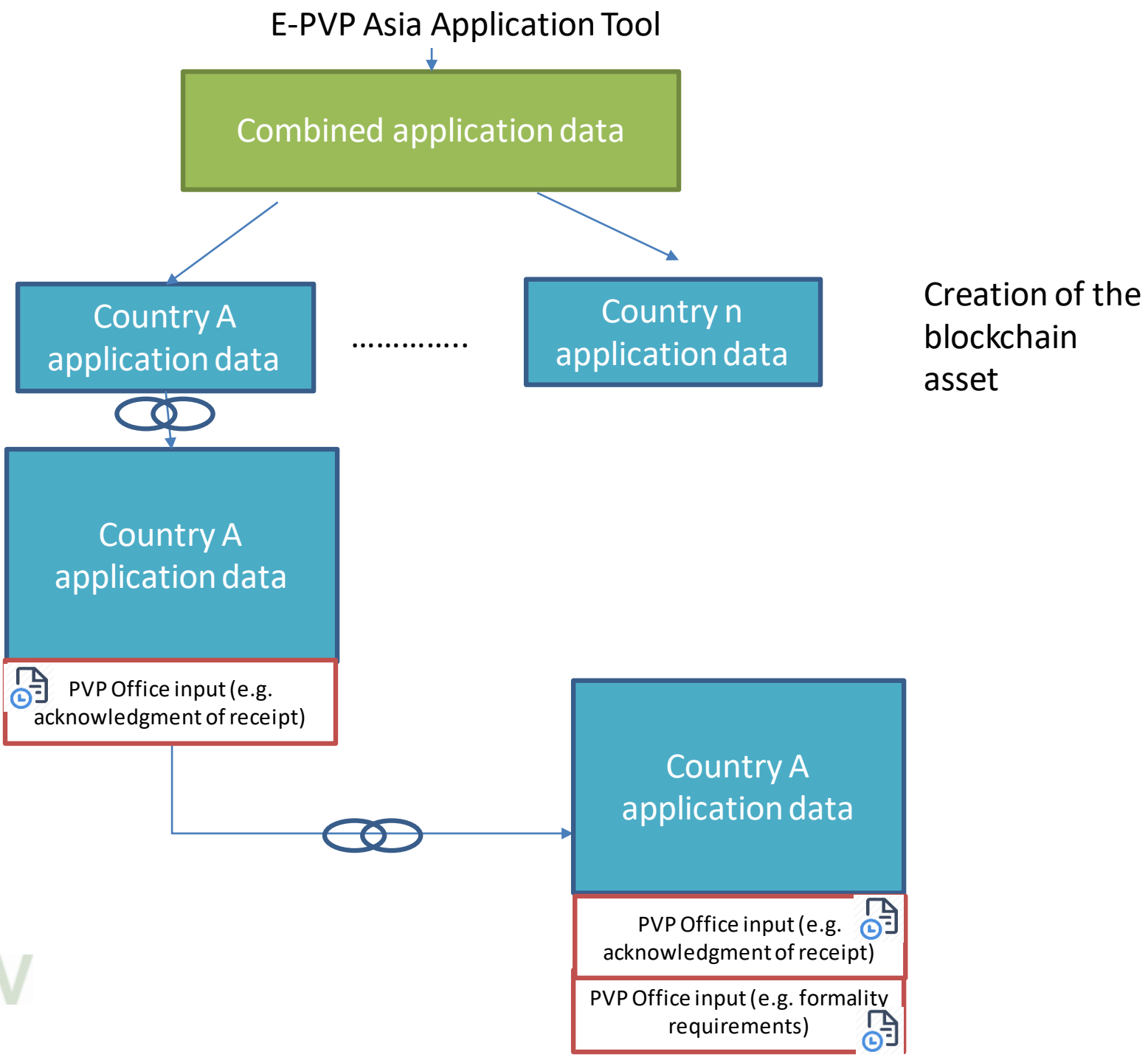

Applicant
PVP Office
UPOV
UPOV PRISMA
DUS Arrangement Tool
e-PVP Administration Module
Application
Application duly filed
Publication
Examination
Novelty
Denomination
DUS
Outside PBR Office
Testing by PBR Office
Objections
Proposed decision to grant
No
Yes
Publication
Title Granted
Publication
Matters after the Grant
Existing DUS test results
Another Authority
DUS trial conducted by another party:
Another Authority
Independent Institute
Breeder
e-PVP DUS Report Exchange Platform
BLOCKCHAIN
PLUTO database & GENIE database


e-PVP Asia Application Tool
Application data Transfer
Email
Machine to Machine (M2M)
PVP Office Administration Module
Examination
National Administration system
M2M
DUS Report Exchange
Email or other methods
DUS Exchange Module
Communication with the applicant
Email or other methods
Applicant Monitoring Module

Blockchain build on private distributed ledgers

e-pvp Asia case




E-PVP Asia Application Tool
Combined application data
Country A application data
.....
Country n application data
Creation of the blockchain asset
Country A application data
PVP Office input (e.g. acknowledgment of receipt)
Country A application data
PVP Office input (e.g. acknowledgment of receipt)
PVP Office input (e.g. formality requirements)

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Challenges

- Compatibility with other systems : PVP offices, Other international organizations, applicants, agents
- Managed transparency : not the full history can be shared with the applicants
- Scalabilty :
  - Addition of new nodes
  - Customization

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Timelines

Proposed time	Activities
October 2021	• Test campaign for PVP offices (feedback) • **Identify applicants/breeders to join the test campaign**
November 2021	• **Test campaign for applicants/breeders** (receive feedback)
First half of 2022	• **e-PVP Asia operational** (Prototype 1)