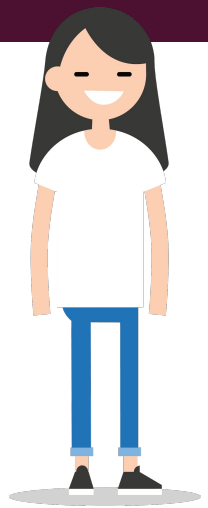
Centre for Digital Public Infrastructure

Financial Address Mapper

for G2P Payments

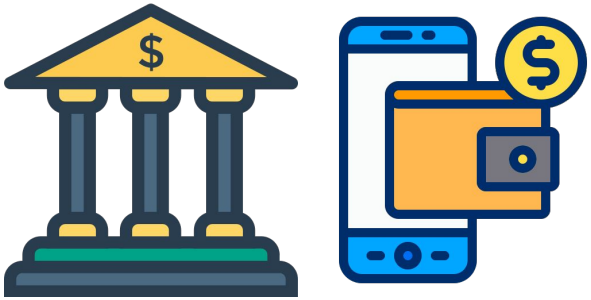
DPI Building Block in Focus

Common G2P Actors



Beneficiary
Of any G2P benefit, incl cash transfers/social protection, subsidies, salaries, pensions, scholarships, etc.

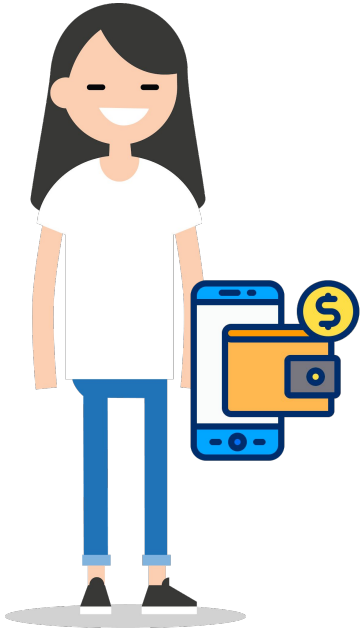
Gov't Departments/Programs
Managing any government-to-person (G2P) benefit/payment transfer



Banks/Mobile Wallets
Institutions holding individuals' or government departments' financial accounts

Status Quo

Programs sometimes impose **specific payment modes** based on their arrangements with banks



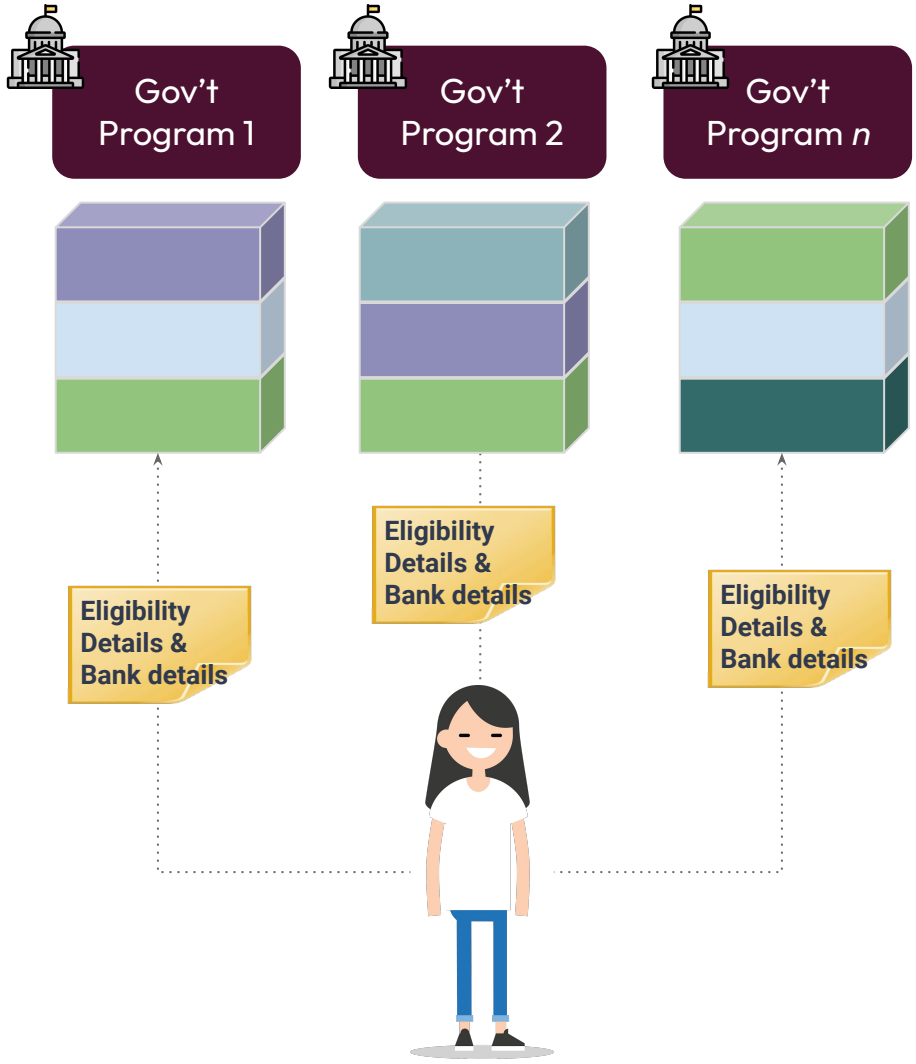
Beneficiary has a Mobile wallet/bank account

Gov't Program 1

New or Specific Bank Account(s) Required
(Based on bilateral tie-ups)

Status Quo

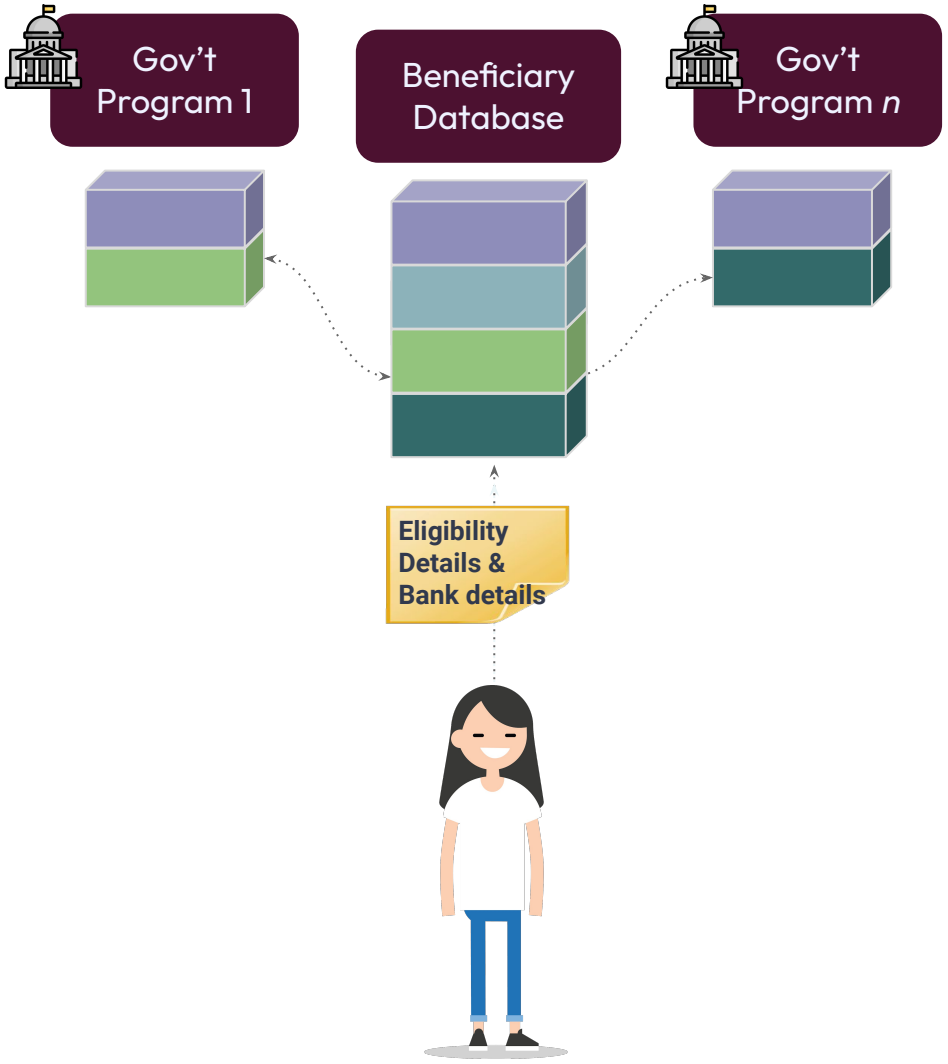
Even if they can use an existing account, **individuals must usually re-provide** similar information to each program



Digitisation Approach

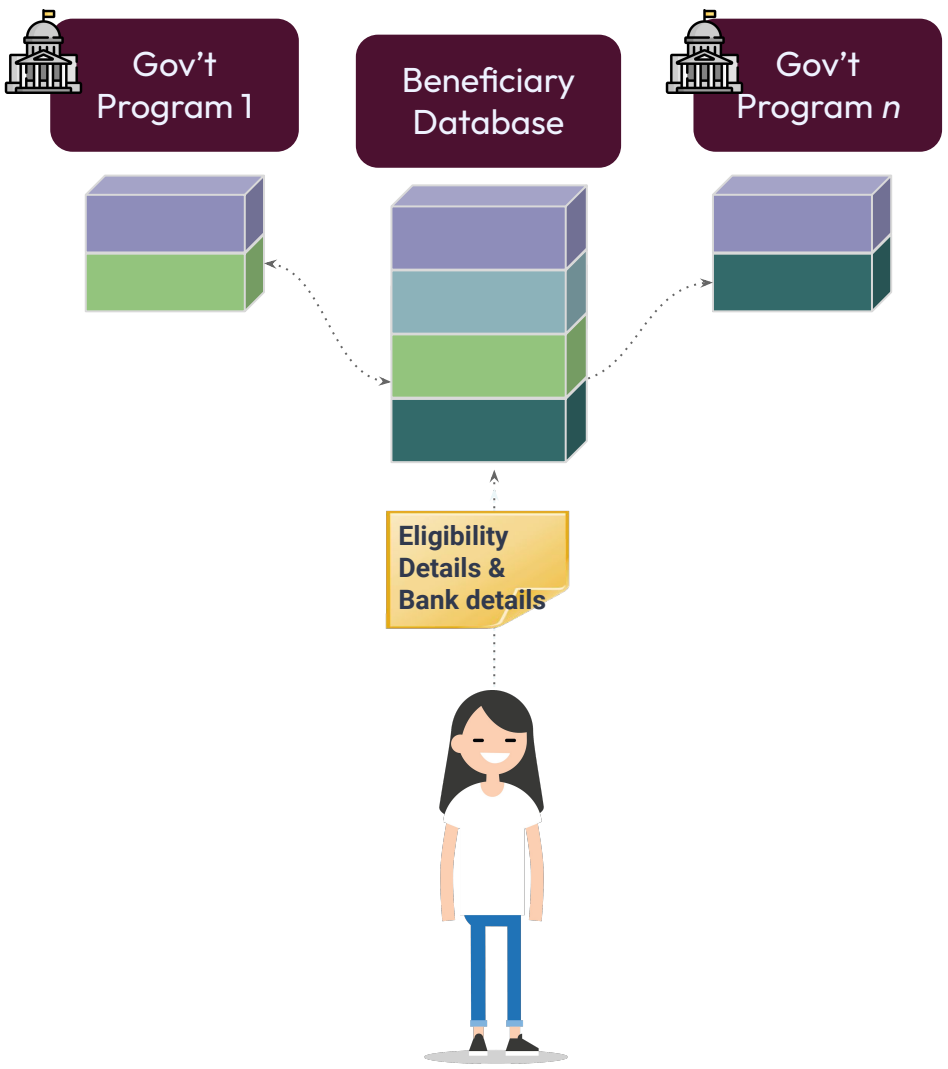
The standard approach is to **centralise** all beneficiary information into a shared database

Including bank account details, identifying information, eligibility criteria, etc.



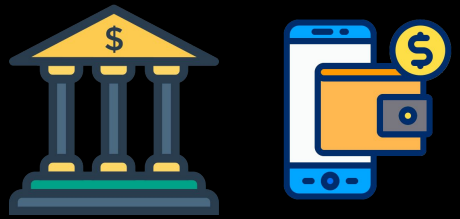
This solution looks good on paper, but tends not to work at national scale!

- → **Difficult** to maintain
  - Unwieldy large database
  - Dynamic rules & data
- → **Political will** to align all departments



Instead, consider **separating eligibility information**

Varies across departments;
Leave in department control



From **financial information**

Minimal & constant across departments

Leverage a Digital Public Infrastructure (DPI) Approach to G2P

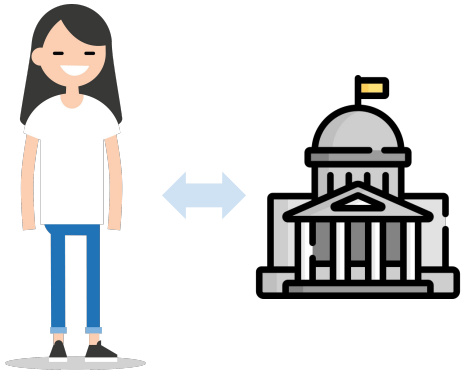
Unbundle the problem

Create a minimal, reusable, privacy preserving utility across departments using open APIs

Give individuals choice of account & accessibility across multiple payment modes

Financial Address Mapper

Sometimes referred to as a Financial Account Mapper



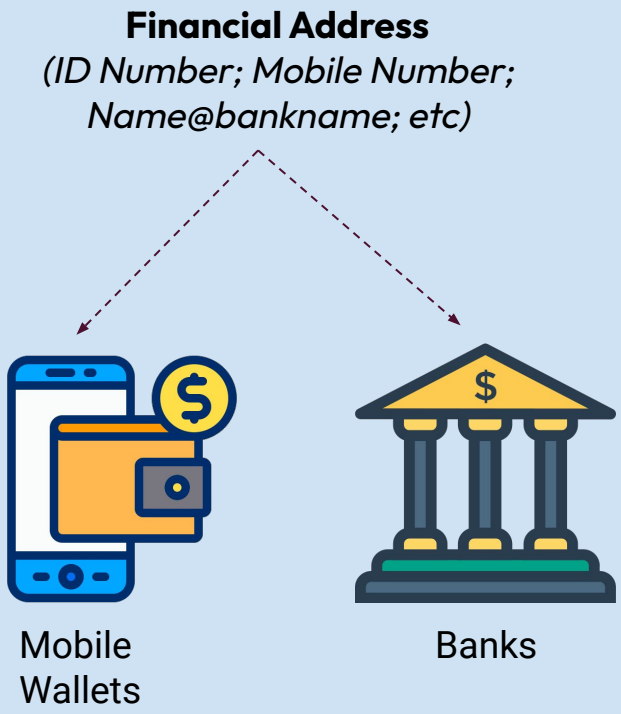
A 4-field registry allowing any gov't program to send money to a beneficiary using only an identifier*

*Note: Architecture allows any **verifiable identifier** to be used, e.g. unique ID, national ID, social protection ID, mobile number, etc.

One of the Building Blocks of G2P Connect open blueprint

https://github.com/G2P-Connect

Financial Address Mapper can let beneficiaries access money interoperably across any kind of account!



For Government Programs & Depts, A Mapper:

1. **Avoids maintaining** sensitive financial info
2. **Avoids re-collecting** financial info again for new schemes/programs
3. **Avoids creating new accounts** or fresh KYC processes, and uses beneficiary's existing accounts
4. **Reduces bounces & grievances:** Customers can change banks in one system without re-updating with every program
5. **Drives new use cases** such as salaries, pensions, & scholarships using same G2P infrastructure

Design Principles: Mapper

Minimalism

4 data fields

Interoperability

Any bank, any wallet, any device, any program

Innovation

Allow banks & Mapper to enable diverse interfaces for update

Asynchronous

Programs adopt Mapper usage **voluntarily** and asynchronously based on readiness

Privacy & Security

Sensitive financial information provided to minimal databases

Inclusive & User Centric

Available **online/offline**
Update info flexibly and only once with bank or directly with mapper

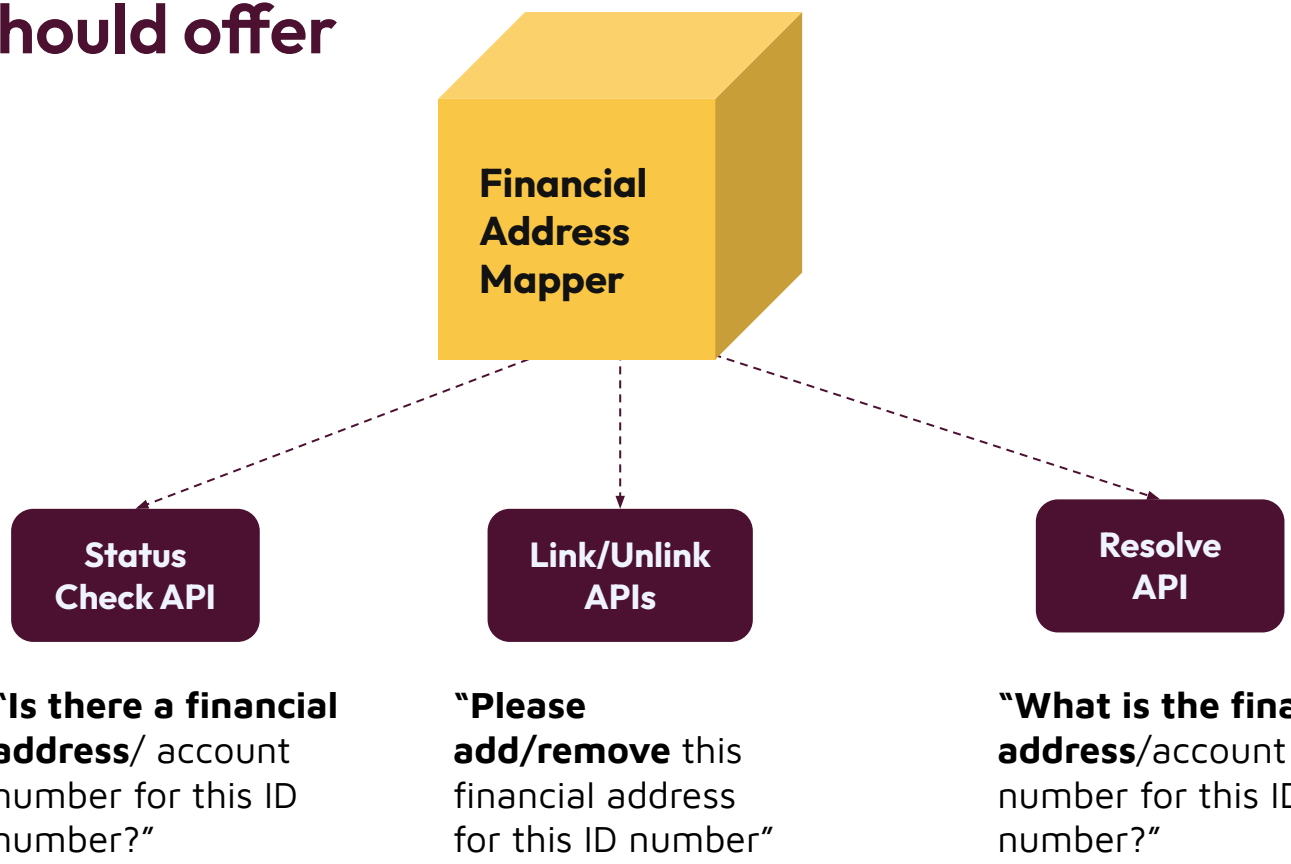
+1 Change

Make a minimal change to existing programs (*collect identifier instead of financial info*) rather than re-engineer their whole process

Evolvability

Future types of accounts or auth modes enabled
(Bank; mobile wallets, crypto, etc; PIN auth, face auth; mobile auth, etc.)

A Mapper should offer simple APIs

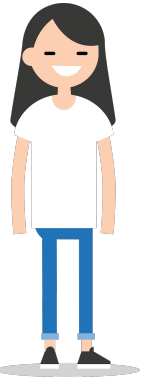


Financial Address Mapper In Practice

Payment Switch

Gov’ts Bank Account

Gov’t Program *n*



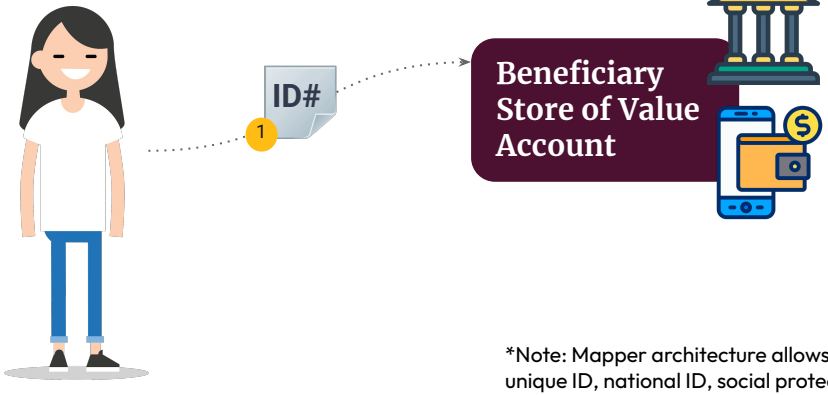
Beneficiary Store of Value Account

Individual provides identifier* to financial institution (FI)

Payment Switch

Gov’ts Bank Account

Gov’t Program *n*



*Note: Mapper architecture allows any identifier to be used, including unique ID, national ID, social protection ID, mobile number, etc.

Individual or FI updates Mapper with ID & Account details

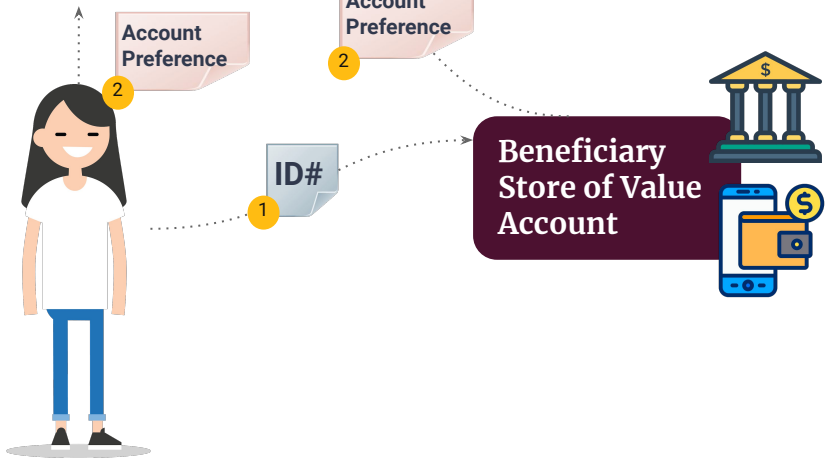
Payment Switch

Gov’ts Bank Account

Gov’t Program *n*

Mapper

Identifier Number	Bank/Mobile Wallet a/c #
2222222	789
33333333	456
4444444	123



Individual provides just identifier* to any gov't department

Payment Switch

Gov'ts Bank Account

Mapper

Identifier Number	Bank/Mobile Wallet a/c #
2222222	789
33333333	456
4444444	123

Account Preference 2

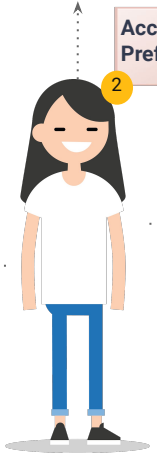
Account Preference 2

ID# 1

ID# 3

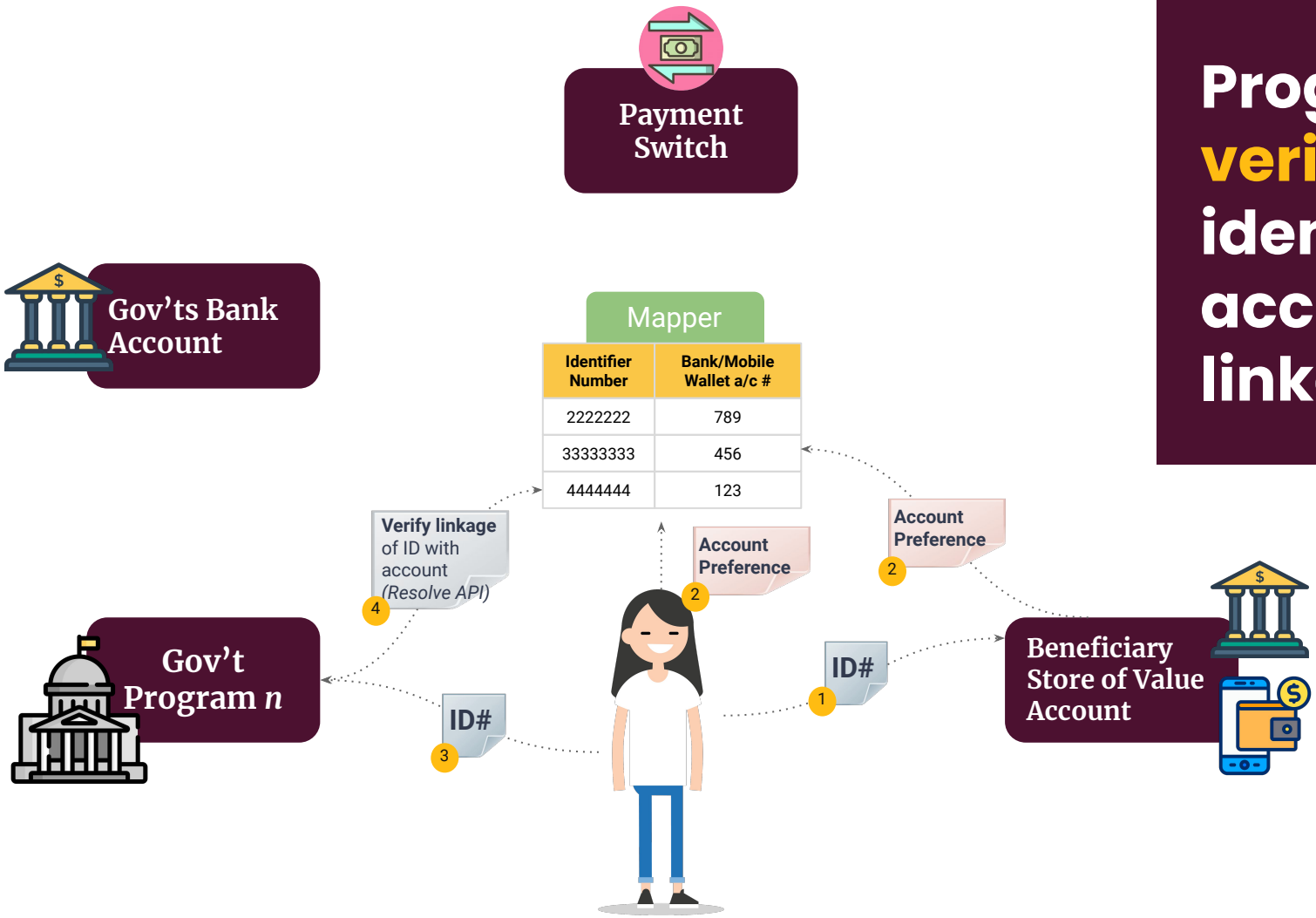
Gov't Program *n*

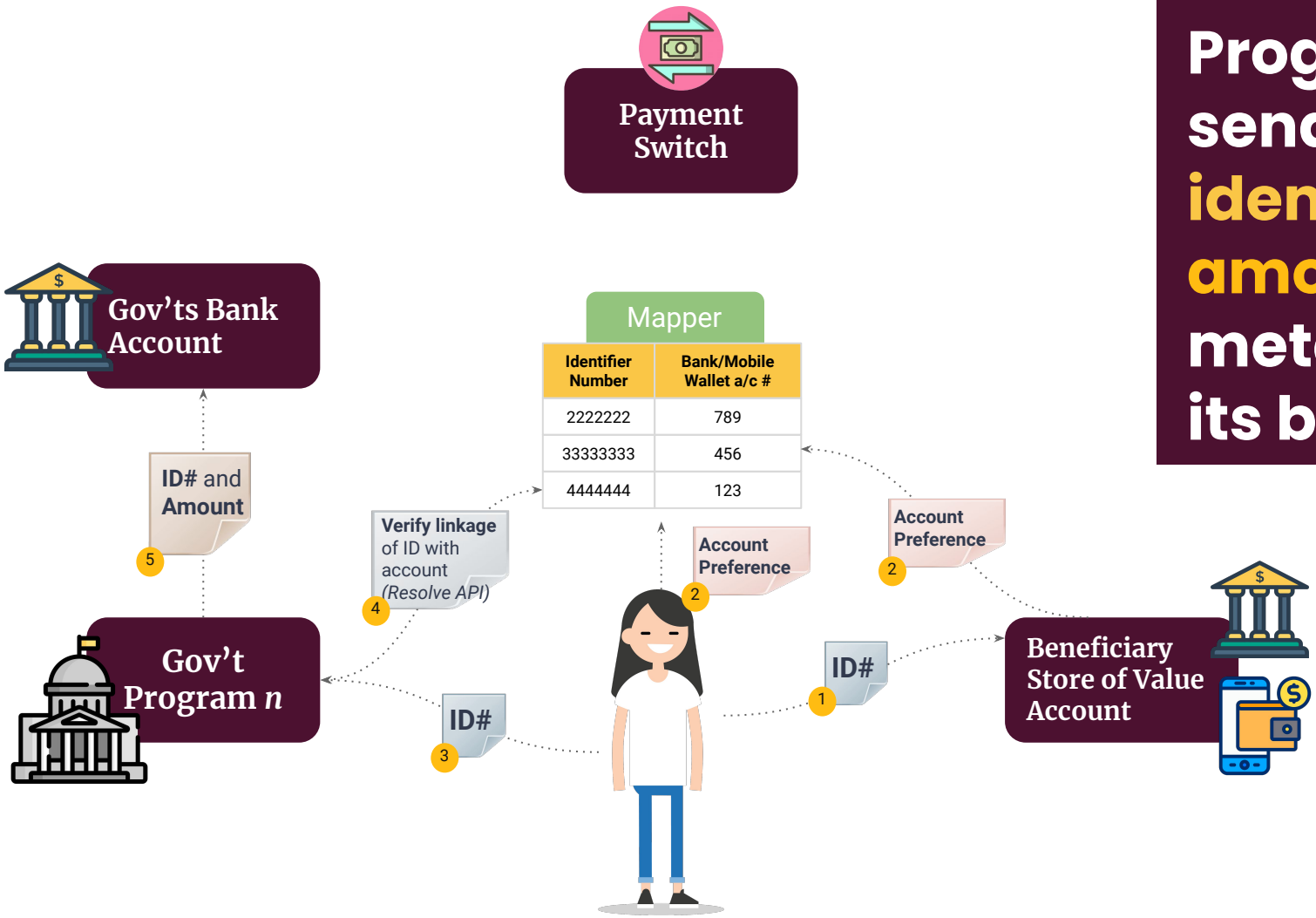
Beneficiary Store of Value Account



*Note: Mapper architecture allows any identifier to be used, including unique ID, national ID, social protection ID, mobile number, etc.

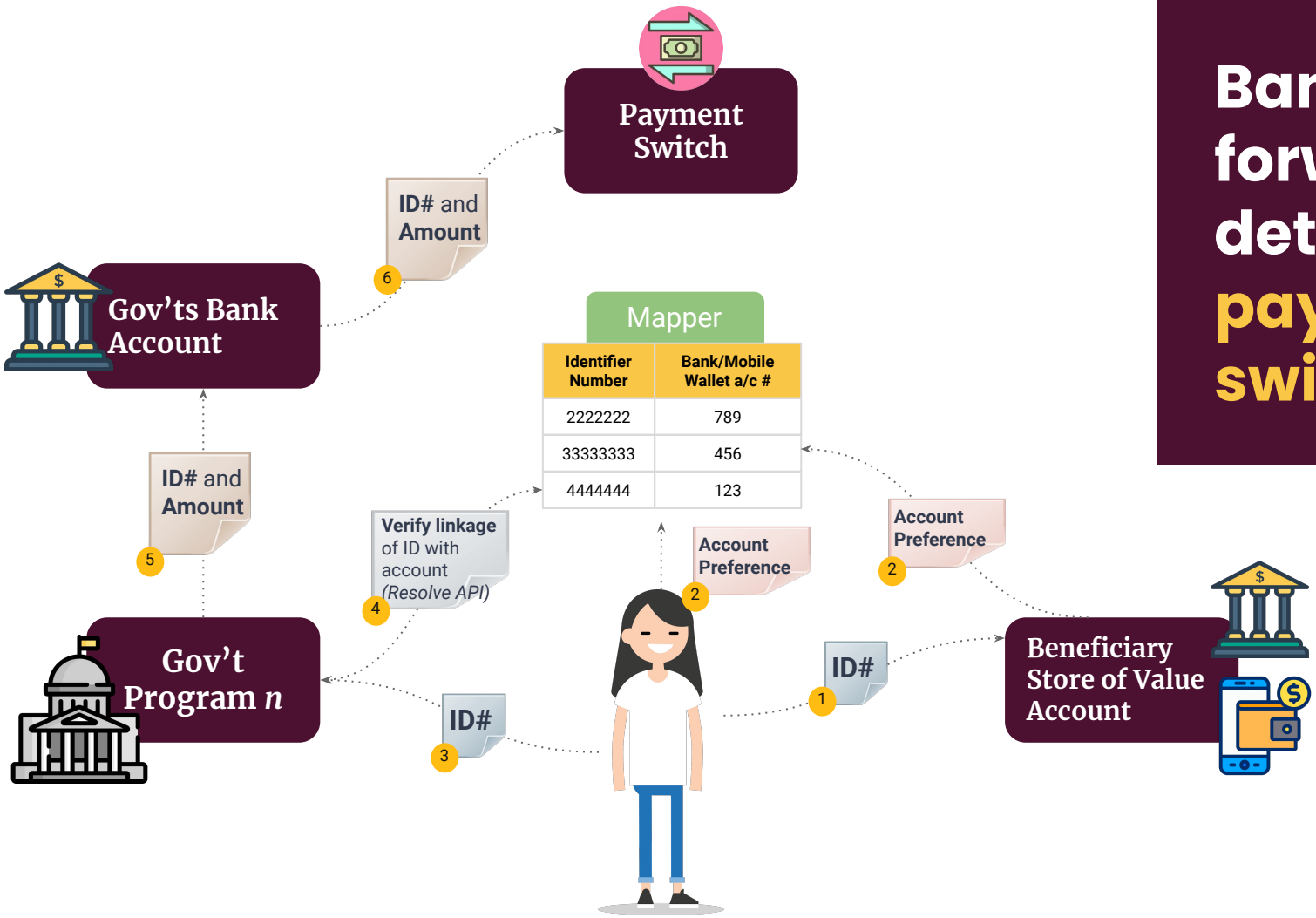
Program verifies identifier-account linkage



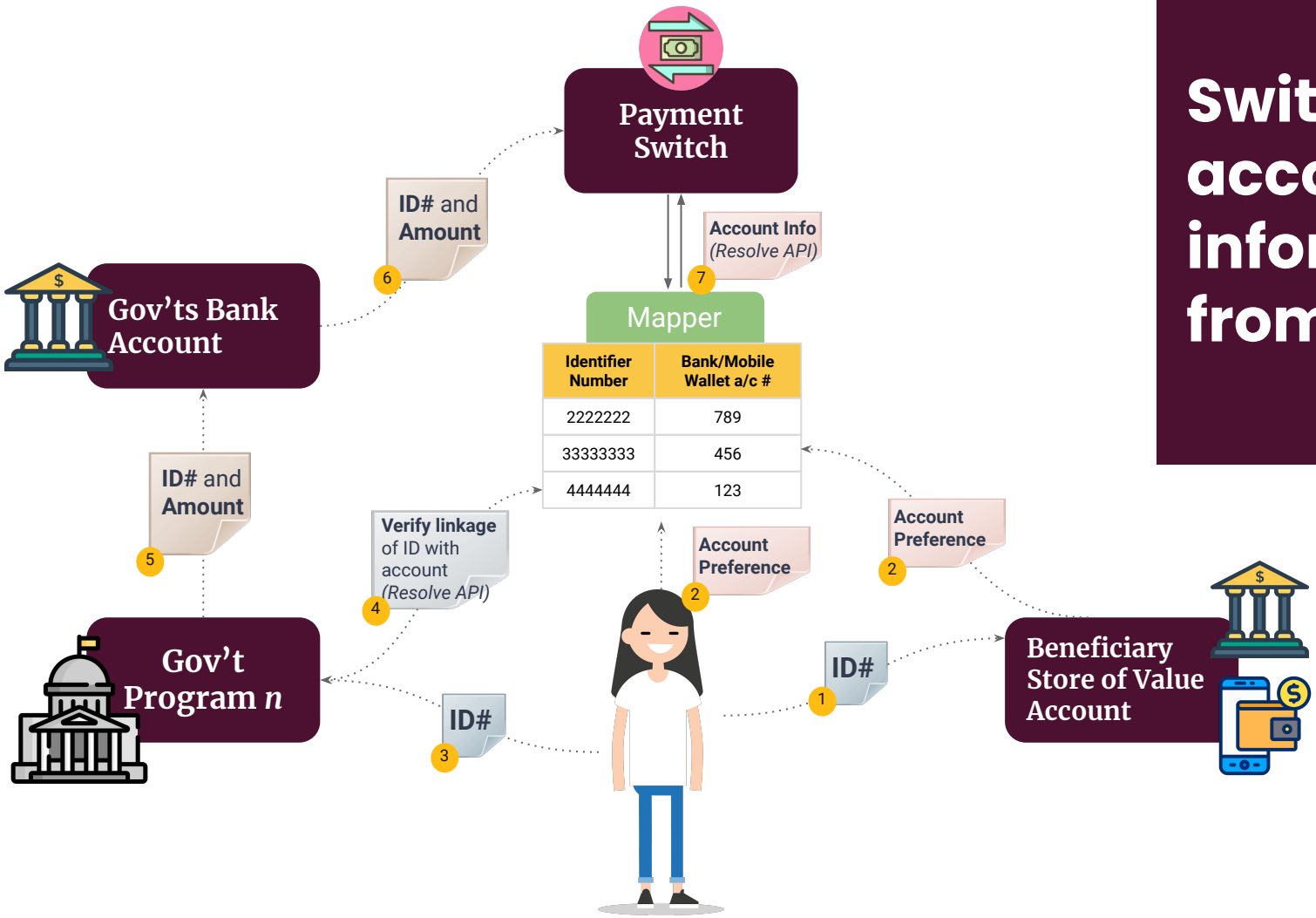


Program sends identifier, amount, & metadata to its bank

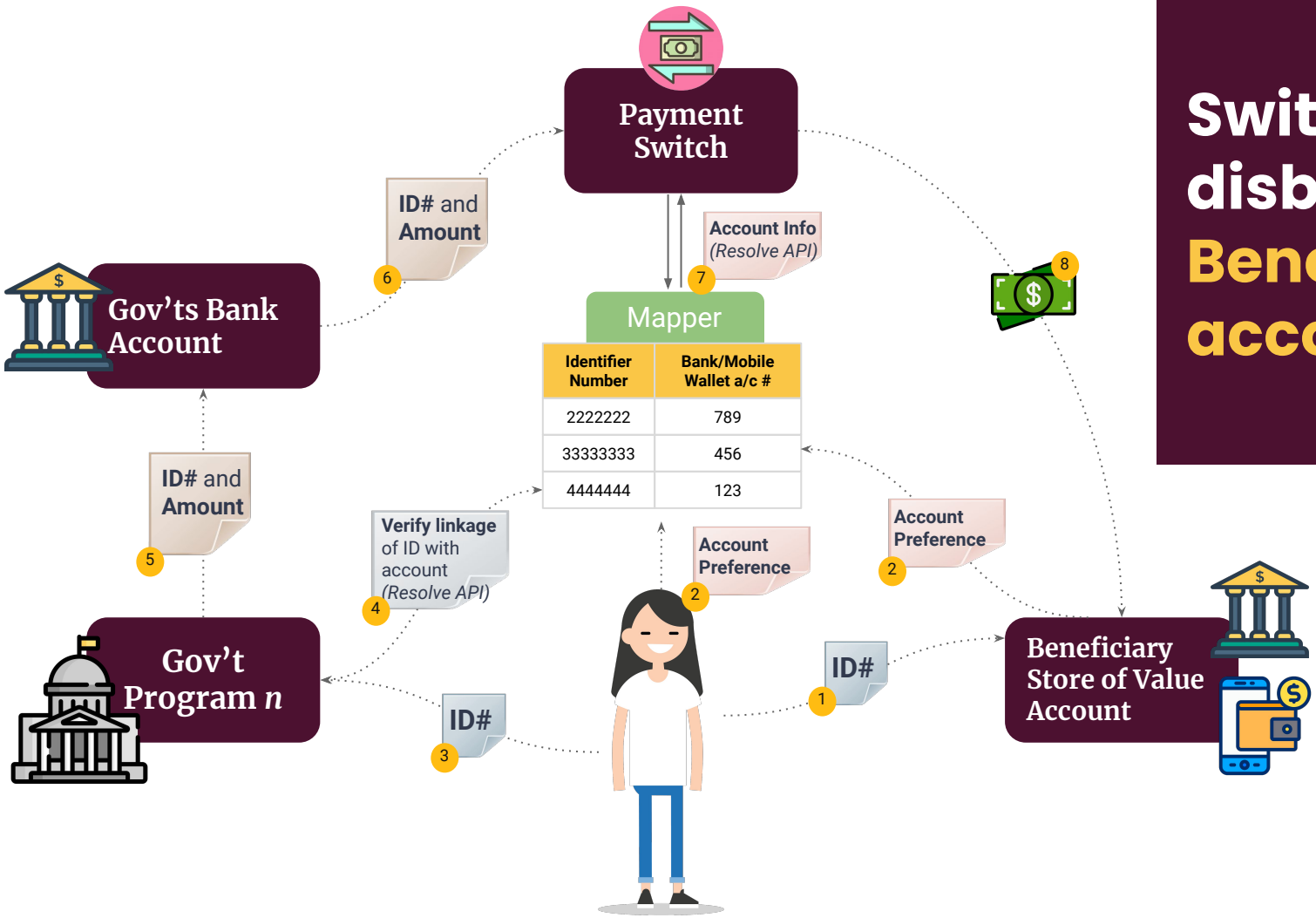
Bank forwards details to payment switch

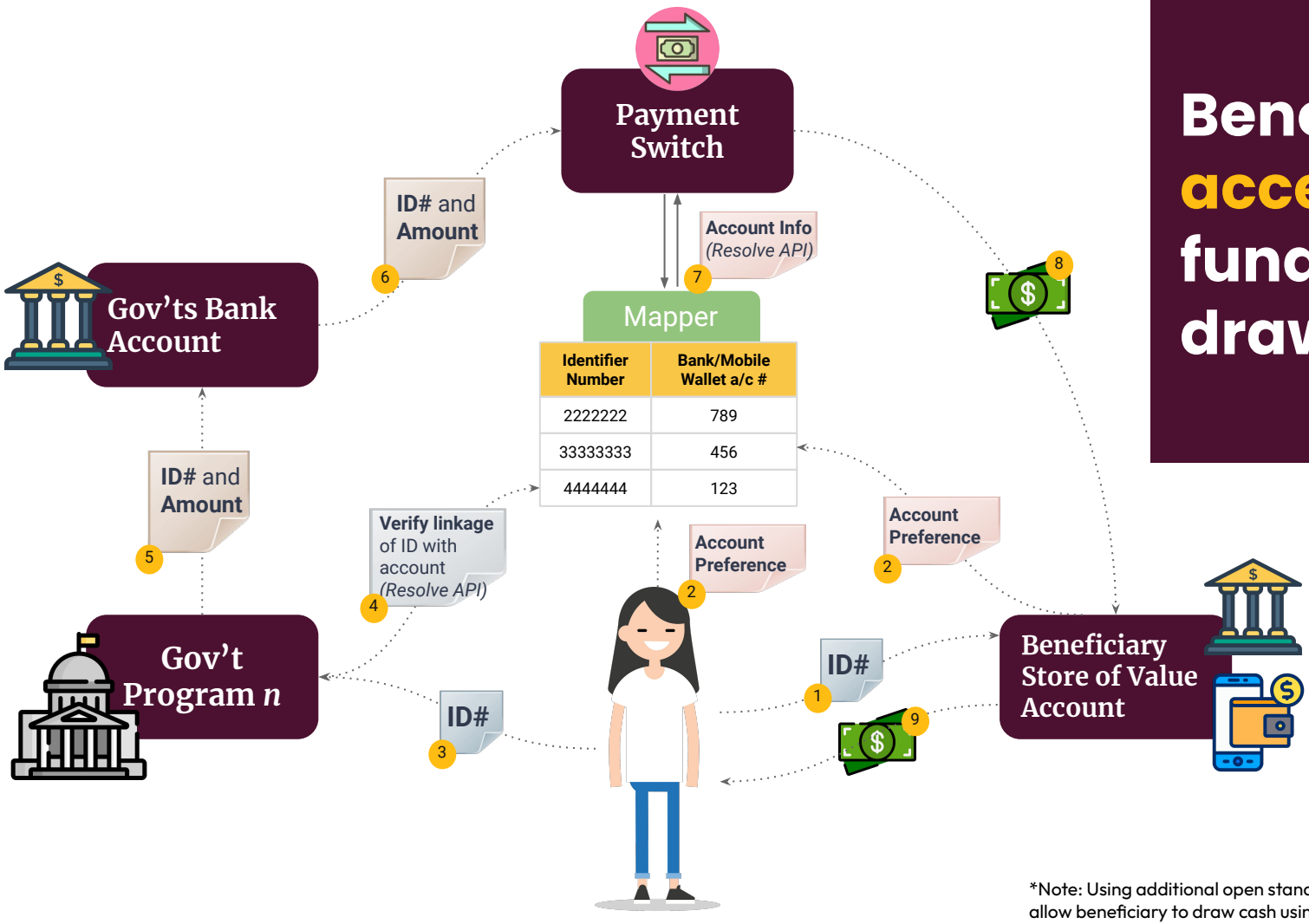


Switch gets account information from Mapper



Switch disburses to Beneficiary account

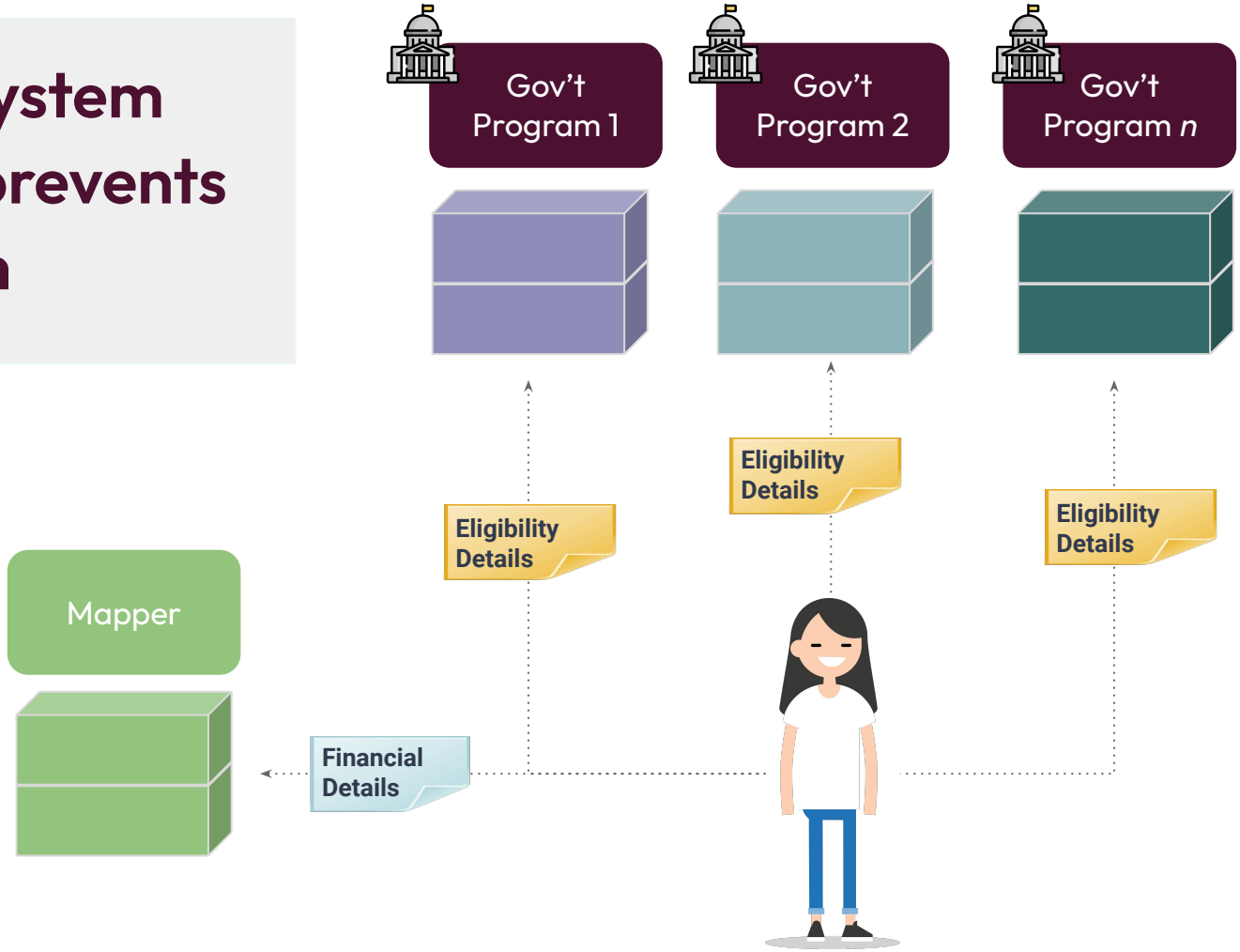




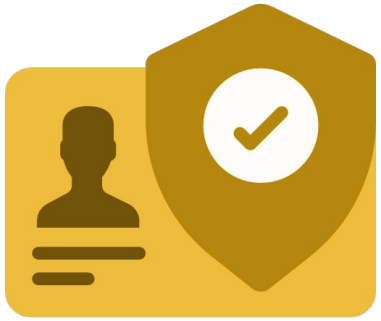
Beneficiary accesses funds or draws cash*

*Note: Using additional open standards for **cash-in-cash-out** can allow beneficiary to draw cash using any agent/any micro-ATM device

At an ecosystem level, this prevents duplication



Mapper Prerequisites



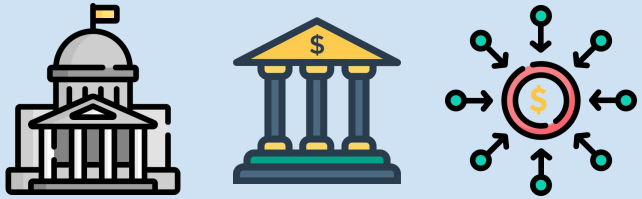
Verifiable Identifier

One or more ID systems/ identifiers with the **capacity to authenticate** the individual

(via mobile one-time-password, offline QR codes, face authentication, fingerprint/iris, etc)

Payment System

One or more **existing payment method/ switch** between banks



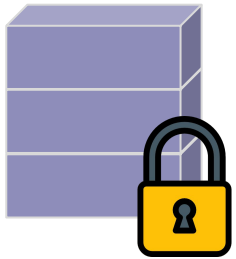
Many institutions can host a Mapper

A Payment switch, Central Bank, Any one G2P program, etc.

And a country can have more than one Mapper

As long as each is available via open APIs

Open Source can be used to create a Mapper faster and cheaper, while still retaining full control

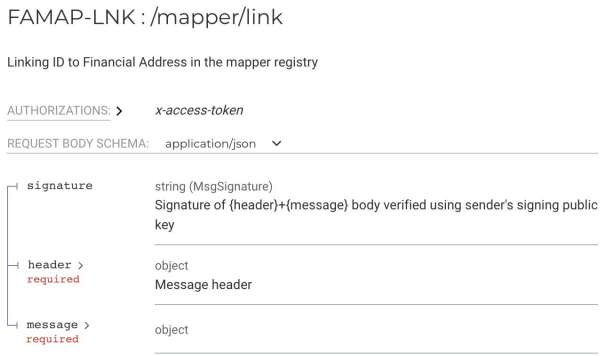


Or you could build one from scratch yourself in house or via a vendor

Either way, leverage these simple **open specifications** for a Mapper

to give your tech team a how-to guide to implement

https://g2p-connect.github.io/specs/dist/g2p-mapper.html



And ensure **interoperability** across your country's G2P ecosystem

Thank you!

https://g2p-connect.github.io/specs/dist/g2p-mapper.html

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