

Whole-of-government Relationship and Authorisation Management Solution

Prepared by:

Trusted Digital Identity Framework project team
Digital Transformation Office
Department of the Prime Minister and Cabinet

Version 0.2 – 18 May 2015

Unclassified

High level overview

INTENT

Implement a whole-of-government authorisation model linked to myGov and the ABR by June 2016, allowing users to nominate others to act on their behalf when interacting across government services (e.g. power of attorney, 'universal' delegations, roles).

DESCRIPTION

This recommendation is for the creation of a whole-of-government Relationship and Authorisation Manager (RAM) solution. Agency on-boarding to this solution will be a subsequent phase. The proposed solution builds upon existing VANguard & myGov authentication systems by allowing access control to be based upon relationships between identities and recording related delegation of functional access. The solution will record relationships specific to access management (regardless of entity type). Agencies will continue to manage the relationships intrinsic to their domain, thus requiring the RAM solution to query those agencies via attribute queries.

CONTEXT

- Identity solutions for Business & Individuals is currently disjoint, making it difficult to provide a seamless experience.
- Agencies have siloed authorisations solutions with legislative & policy barriers to sharing.
- Some agencies assume AUSKey holder has permissions for all agency functions.
- Some transaction require parties to impersonate others.
- Some organisations don't trust their own management of their AUSKey credentials
- Power of Attorney has "legacy" complexities that are not present with nominations from one customer to another

CONSTRAINTS

- A separate interim solution will be provided by Sept 2015 for "individuals in business" to connect ABN to MyGov. This solution will provide the long term solution.
- Need WofG Authorisation solution by June 2016.
- Privacy of individuals & confidentiality of businesses must be preserved.

ADDITIONAL DESIGN CONSIDERATIONS

- Need to recognise industry players (Facebook, Google) are evolving standards based solutions, e.g. OIDC.
- Consider privacy principles around consent and sharing
- Need to consider external systems, processes and environments
- Need to ensure operates in wholesale and retail contexts
- Authentication & Authorisation capability should be consistent across channels
- Authorisation process needs to be simple and information kept current
- Will record relationships & authorisations between any entity type (Individual, Organisation, Device).
- Will leverage existing stores for attribute based queries (where possible)
- Ensure credentials are not automatically elevated
- Need to separate identity level & credential level.
- Trusted 3rd parties may create relationships
- Subject of relationship may not have a credential

KEY STAKEHOLDERS

Department of Human Services
Australian Taxation Office
Department of Industry
and rest of govt. who needs it!!

Lead Agency –ATO

DEPENDENCIES

- Strengthening of Digital Credential (by December 15)
- myGov & VANguard integration
- Agencies will need to modify their systems to be aware of this solution
- Development of Identity Framework
- Adoption requires standardisation of policies & processes for sharing info

ASSUMPTIONS

- The strength of a credential may need to be validated by parties delegating authorisations to it.
- No assumption is required around strength of identity, however, Parties will need to undergo some process to determine if they trust the identity of the delegate.
- Identities and/or Credentials may be offered by flexible set of accredited 3rd party Identity Providers. RAM should be unaware of Credentials and just use a "link id" supplied by the Identity Hub.
- The WofG Authorisation capability will offer UIs that allows:
 - Customers to create relationships, grant/ request authorisations
 - Agencies staff (e.g. Customer Service Reps) & other trusted 3rd parties (e.g. Tax Agents) to view and create relationships/ authorisations
- To reduce cost of adoption and hence facilitate update (by agencies & 3rd party software developers) the solution will be based on a well accepted standards backed with multiple open source implementations (maybe OpenId Connect).
- The WofG Authorisation capability will offer "common" authorisation & relationship functions (sensitive to context). Complex/ esoteric authorisations will remain with agencies.
- Agencies may seek to internally consume ("dog-food") the authorisations by using it to manage their internal authorisations and delegations.
- All authorisations are established in a context (Parties/ Functionality/ Parties Role & Persona) and have a known end-date (upon which may need to be periodically re-validated). Authorisations may require additional attributes which may result in a step-up in authentication from by transacting party.
- Some relationships automatically create authorisations, e.g. the appointment of a tax agent gives a authorisation to certain tax functions; appointment of doctor gives authorisation to eHealth record. (Nomination v.s. Legal Instrument)
- For some relationships, e.g. Powers of Attorney, there is no "Source of Truth". Currently agencies have their own business processes for verifying & recording such relationship. Also, the actual authorisations granted due to this relationship may be highly contextual (based on jurisdiction & business service).
 - In future state RAM will become a repository in which agencies or delegators may record such authorisation based relationships, together with claims that agency or delegator is able make about that relationship, e.g. Power of Attorney document sighted by non-technical contact centre staff. Over time agencies will need to re-engineer their business processes to exploit the RAM relationships (and the degree of confidence behind that record). Currently there exists obstacles to sharing this info.
- Delegations may be granted to a business and then sub-delegated to a person



CUSTOMERS

Following is an outline of what we know about the potential initial use of a whole-of-government voice authorisation capability:

Australian Taxation Office

Individuals: Aside from Tax Agents (see right), Power of Attorney would be the principle use by individuals. Currently this is only supported by a note of the name.

Business: ATO currently has the Access Manager system for recording authorisations from one AUSKey to another. At the moment Access Manager does not support myGov credentials for businesses.

Tax Practitioners: Tax Agent to their customer's links are recorded in the ATO's Client Register as Client Links. 75% (ish) of tax returns are lodged by Tax Agent's on their customer's behalf. ATO's Access Manager examines Client Links to validate a transaction. Authorisation rules are complex, links to Income Tax role give "god access", links to other roles are limited to the data associated with that role.

Department of Human Services

Centrelink has existing system support for an "Auth Rep" model. It is anticipated that there is a need for approximately 1 million Auth Rep relationships. None of the other master programs have a sufficiently mature system support, the quantified demand for this need is not well understood.

BENEFITS FOR CUSTOMERS

- Faster and easier to establish delegations
- Able to reuse existing WofG credentials – which make those credentials more valuable and worth having
- Greater security of information
 - Provides confidence that only delegated entities are accessing services on customers behalf
 - Avoids the need for delegate to impersonate the end customer
- Easier to move between channels and roles/authorisations
- Easier to tailor the user experience to the Role/Personas (security trimming/ personalisation)
- Ultimately, as part of a whole-of-government service offering it will be easier to do a cluster of tasks across multiple agencies

The desired future experience: selected user pathways

User Pathways

The following six slides illustrate at a very high level selected scenarios. These slides illustrate the pathway from the user's perspective. The information flows between systems are shown later. The selected scenarios are:

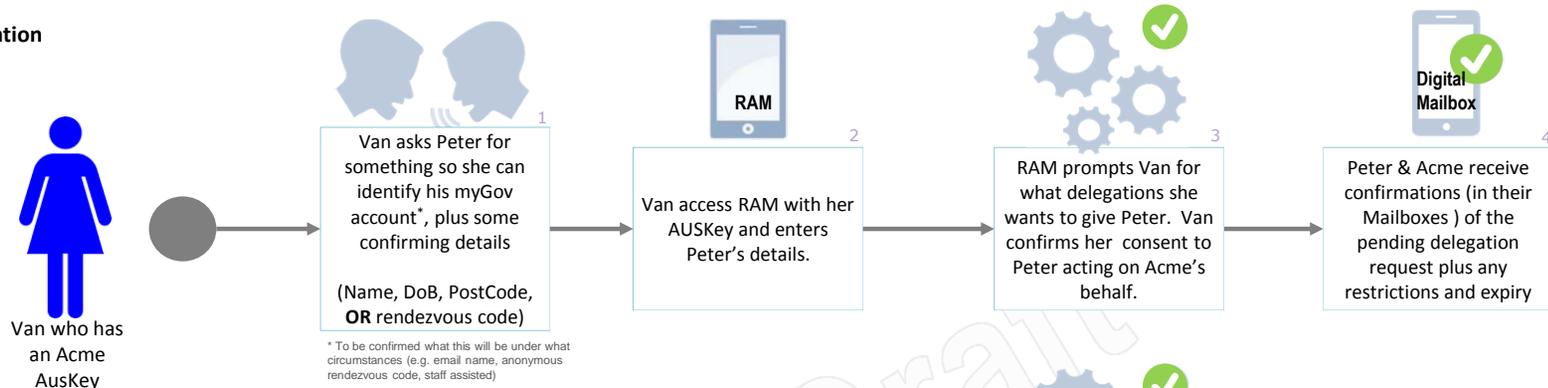
- **Business Scenario:** showing an employer/ business owner setting up an employee to act for the business
- **Individual Scenario:** showing a couple setting up permissions for the other partner to act on their behalf
- **Trusted Party Scenario:** showing a tax agent establishing authority to view one of their customer's details
- **Third Party delegator scenario:** showing an authorised government official setting up a delegations
- **Two complex scenarios:**
 - The same third party delegator but where one of the parties doesn't have all the necessary digital identities
 - A merge scenario - someone with multiple credentials only wants to manage their relationships once across all credentials.

The desired future experience: selected user pathways

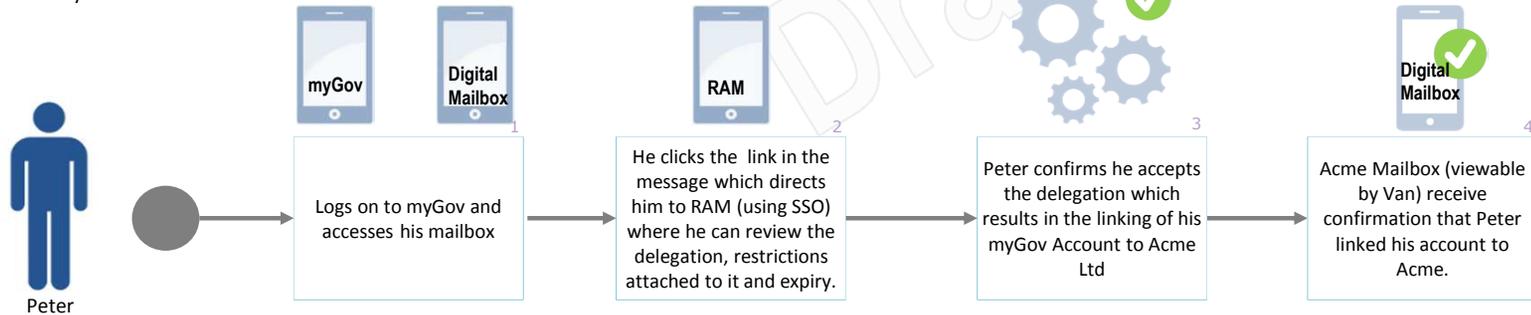
Business Scenario: A business customer (Van who owns for Acme Ltd) chooses to give an employee (Peter) delegation (via his myGov credential) so he can submit the Acme's Company ITR.

The below scenario is for illustrative purposes only and assumes the following pre-condition; that Van has an Acme AUSKey and Peter has a myGov account linked to some service that will allow RAM to validate his Name, DoB & Postcode.

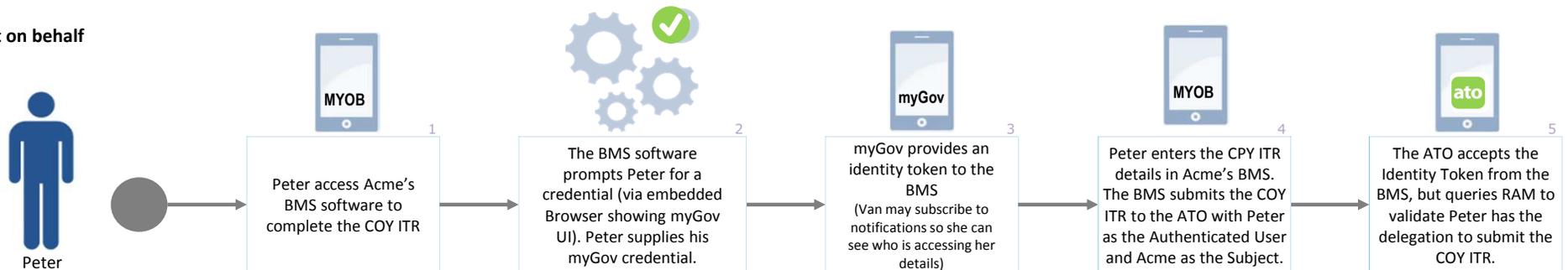
Delegation



Linking



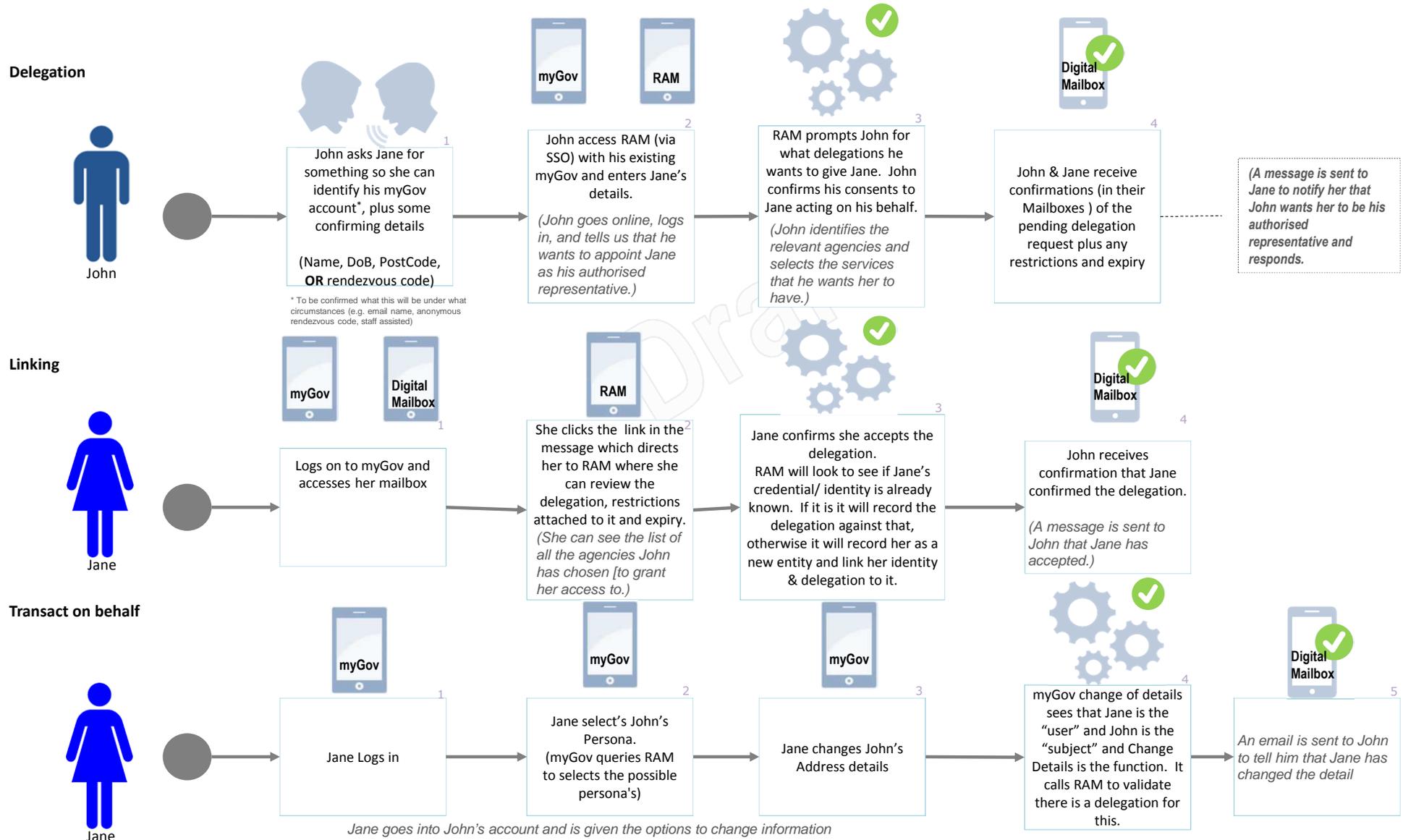
Transact on behalf



The desired future experience: selected user pathways

Individual Scenario: A couple forms a relationship and makes a decision that they want to appoint the other person as their representative.

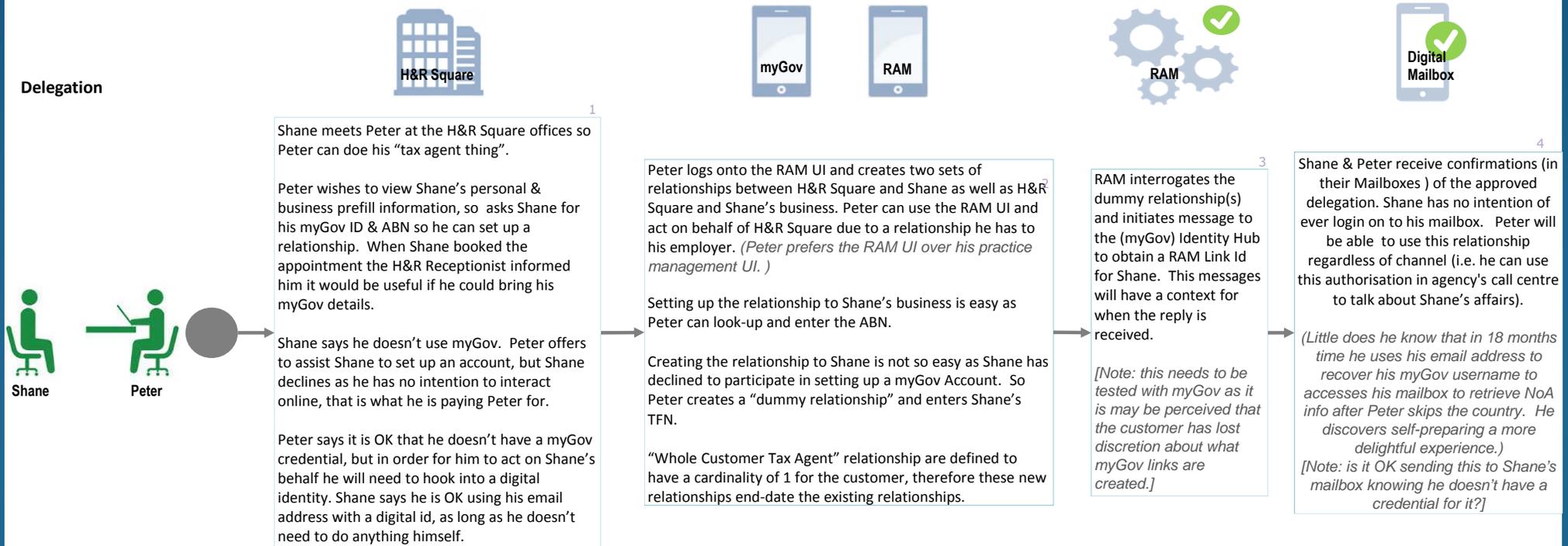
John goes online, logs in, and tells us that he wants to appoint Jane as his authorised representative.



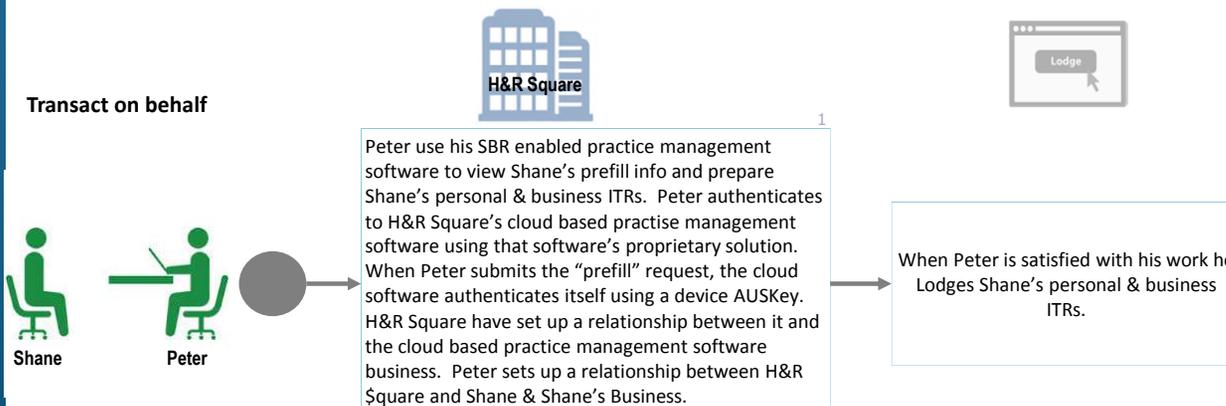
The desired future experience: selected user pathways

Trusted Party Scenario: Shane is a small business owner and uses tax agents. He feels his existing tax agent is overcharging so he decides to go to a new tax agent H&R Square. At H&R Square he is met by Peter, a qualified tax agent.

Delegation



Transact on behalf

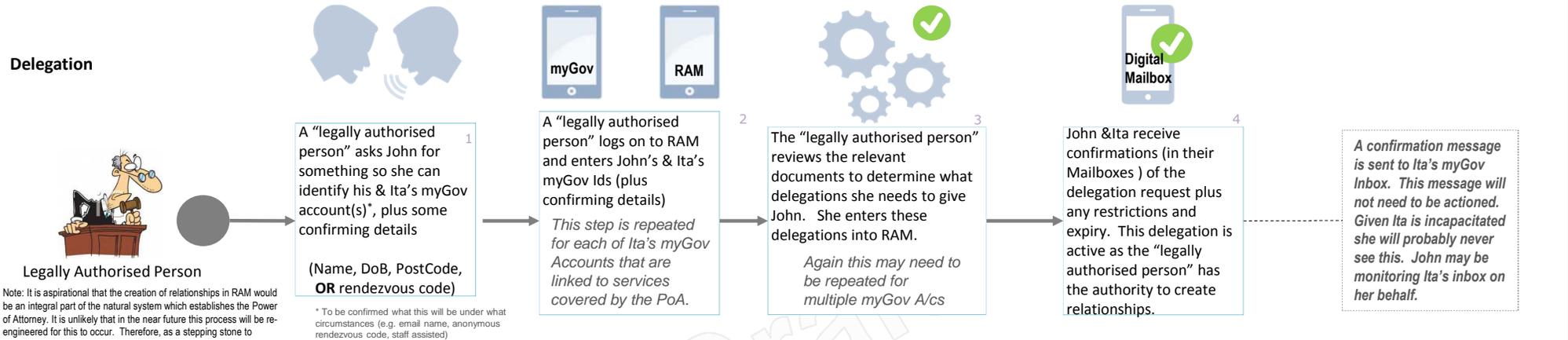


This scenario illustrates where the subject doesn't have a credential recognised by RAM. In this scenario, the subject would be capable of having a credential, but is choosing not to have one. A very similar scenarios exists where due to some limitation (e.g. an older person who is uncomfortable with digital channels) the subject is unable to obtain a credential. How will the subject provide their consent? Possible answers are they visit a shopfront, interact via a call centre, etc. in order to provide consent. This is not an ideal situation the interactions will occur outside the digital channel

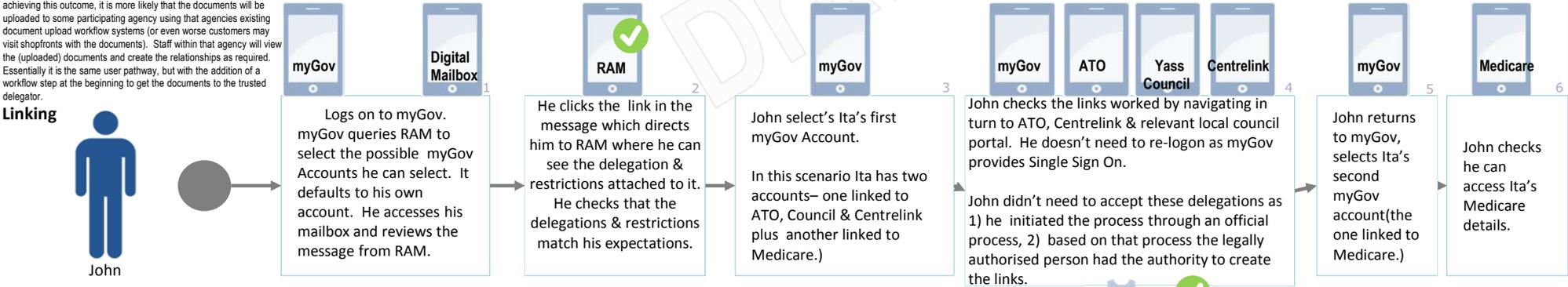
The desired future experience: selected user pathways

Third Party Delegator Scenario: John's widowed mother, Ita, had a stroke and is left in a nursing home unable to make her own decisions. John obtains appropriate powers of attorney through relevant processes. John wishes to update Ita's aged benefit details. John & Ita each have myGov Account. John knows the details for both. Ita has two myGov Accounts, one linked to ATO, Centrelink & Yass Council, the other linked to Medicare.

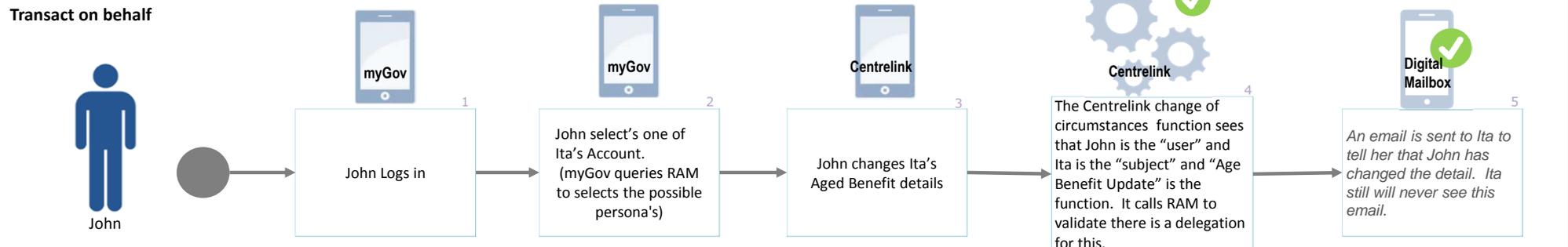
Delegation



Linking



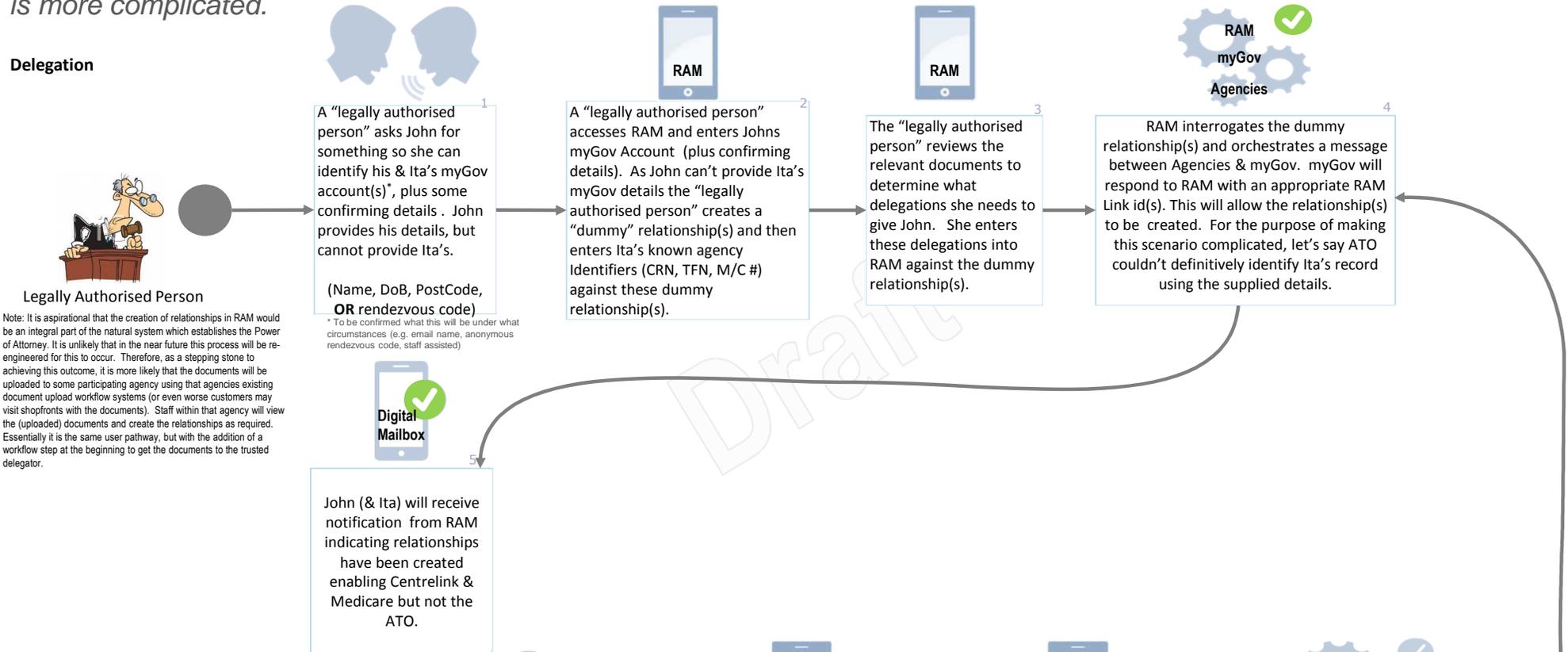
Transact on behalf



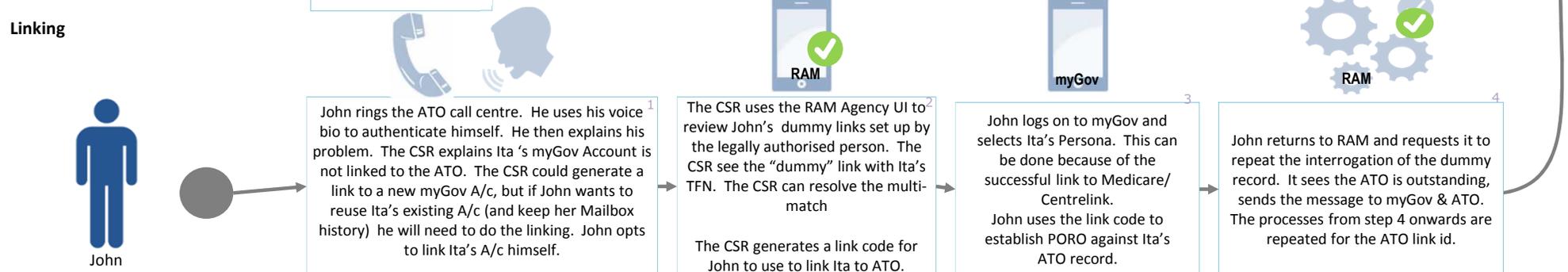
The desired future experience: selected user pathways

Complex Scenario 1: John's widowed mother, Ita, had a stroke and is left in a nursing home unable to make her own decisions. John obtains appropriate powers of attorney through relevant processes. Ita didn't anticipate her infirmity and so didn't tell John her digital identities she used for Medicare & Centrelink, also, she never linked her identity to the ATO. Thus John's life is more complicated.

Delegation



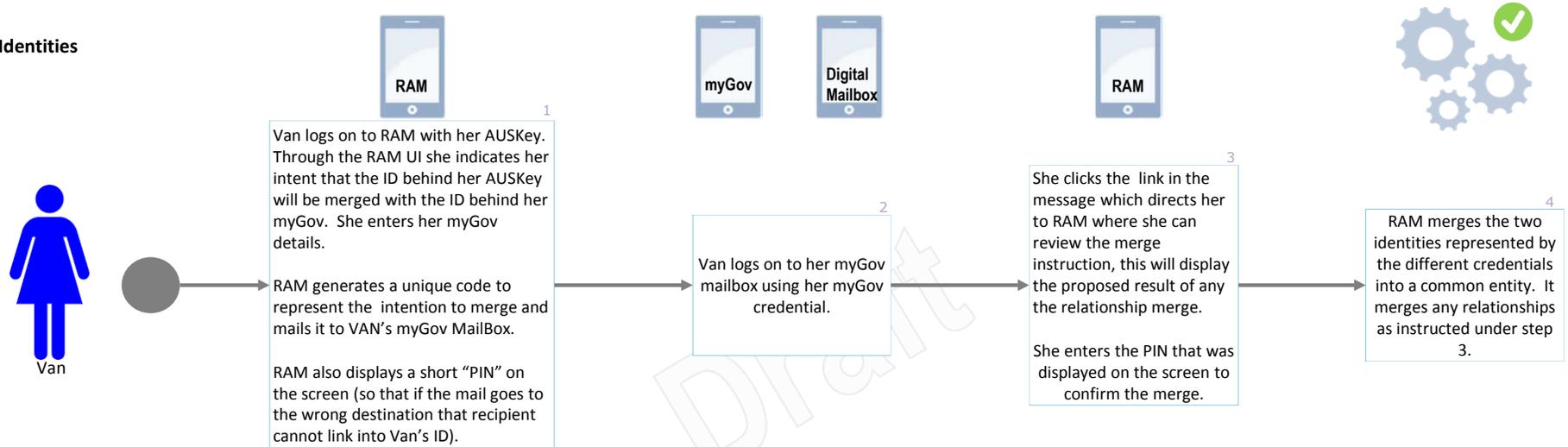
Linking



The desired future experience: selected user pathways

Complex Scenario 2: A business customer (Van who owns for Acme Ltd, we met her in an earlier scenario) has decided connect her myGov to her ABN. She doesn't want to maintain her relationships twice under each of these separate identities/ credentials, thus she chooses to "merge" these identities together.

Merge Identities



Terminology

Delegate: entity who will be transacting with government on someone else's behalf. To do so they will need to have been granted authorisation.
a.k.a User

Subject: the entity which is the focus of a transaction/ interaction.

Delegator: entity who grants authorisations to other entities to interact/ transact on behalf of a Subject. Examples include:

- Businesses with employees
- Businesses or Individuals with professional representatives, e.g. lawyers, tax agents, doctors. These professional representatives may be businesses or individuals.
- Individuals with relatives who are unable to transact on their own behalf (say infirmed or travelling or simply due to inconvenience)

Typically the delegator will be the subject customer (or an existing delegate of the subject). However, it may be: a court determining a person is incompetent, it may be another employee who has been given delegation authority, it may be a member of a trusted group (e.g. doctor or tax agent) who is trusted to delegate specific authorisations to themselves.

Registration Authority (RA): a known & accredited organisation/system which is trusted to provide identity information about entities.

Credential: Data presented as evidence of the right to use an identity or other resources.

Credential Service Provider (CSP): an organisation which provides a credential –based on an identity from an RA. Some organisations will do both: Registration Authority (RA) & Credential Security Provider (CSP) functions.

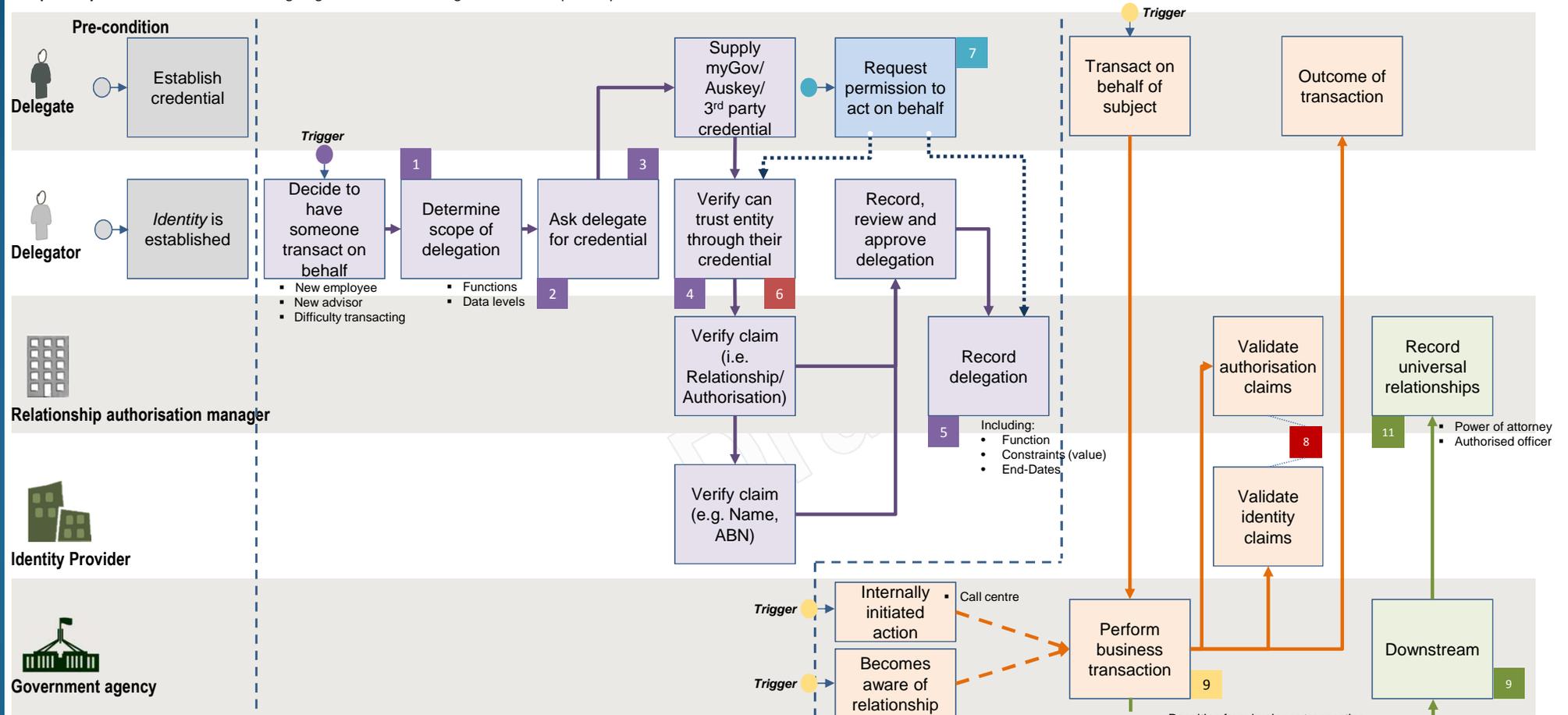
Single Sign On (SSO): This is the ability to sign-on (log on) to one site (e.g. myGov) and then allow the user to interact at another site (e.g. RAM) based on the subsequent sites having a relationship and trusting information supplied from the first site.

Business Management Software (BMS): It is common for businesses to use software products (such as accountancy software) to transact with government. This is also sometimes generically referred to as wholesale services (as opposed to a Portal or Government App which is considered a retail offering).

High level process map

Relationship and authorisation Management - User Pathways

User pathway – Authorisations The following diagram illustrates at a high level the user pathway for Authorisations.



1 The delegator will need to decide what functions they wish to have done by someone else. They will also need to decide what limits to that function (only on certain topics, only for transactions below certain value).

2 In order to be able to operate digitally the Delegator will need a credential

5 All relationships/ authorisations have an end-date

3 In order to grant the delegation the delegator must know who to give that delegation to. It could be as simple as asking the (to be) delegate for their myGov user name/ AUSKey distinguished name for subsequent selection when using a RAM User Interface. It may also require capturing additional claims from the (to be) delegate, e.g. the ABN of the Tax Practice they (claim to) work for.

4 How can the Delegator know to trust this credential (and hence the underlying entity)? It may be necessary to insist upon certain claims to be associated with the credential, e.g.

- the delegate works for an ABN
 - The delegate has the expected name, DoB & Postcode or other shared secret
 - it is secured by a second authentication factor such as One Time Password
- This is going to take community education.(e.g. only trust validated ids)

6 How do we avoid this becoming a phishing mechanism.

7 Not all subjects will have the capability or willingness to operate digitally. Some of these will need to go down the digital assistance path. Others will be helped out by the delegate being trusted to grant authorisation to themselves.

8 These solution will become a honey-pot for attack.

9 When performing any non-self-service business function, in addition to validating the identity, the Agency will need to check any authorisations claims. Contacts through call centres is an example of this.

9 A downstream outcome of a business transaction may be to record a relationship in the WofG Solution.

11 Relationships will be either nominations or legal instrument.. Bus Processes will need to be modified to allow WofG Usage.

High level data/information flow

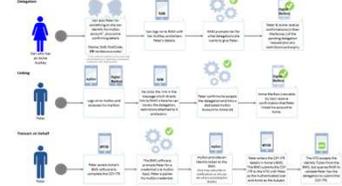
The following slides expand upon the high level user pathways shown above to begin to describe how the various systems collaborate to support the user pathway. The selected scenarios are:

1. An Employer using VANguard to link an Employee using myGov
2. An Employee using myGov accessing focused business functionality
3. One partner in a relationship linking to the other partner
4. One partner in a relationship Acting on behalf of the other partner
5. A trusted tax agent setting up relationship to their customer
6. A tax agent using the relationship to view customer details
7. A trusted government official setting up relationship/ authorisation between two individuals
8. A carer using a 3rd party established relationship/ authorisation to act on behalf of another
9. Same as 7 but with the extra complexity of missing identities

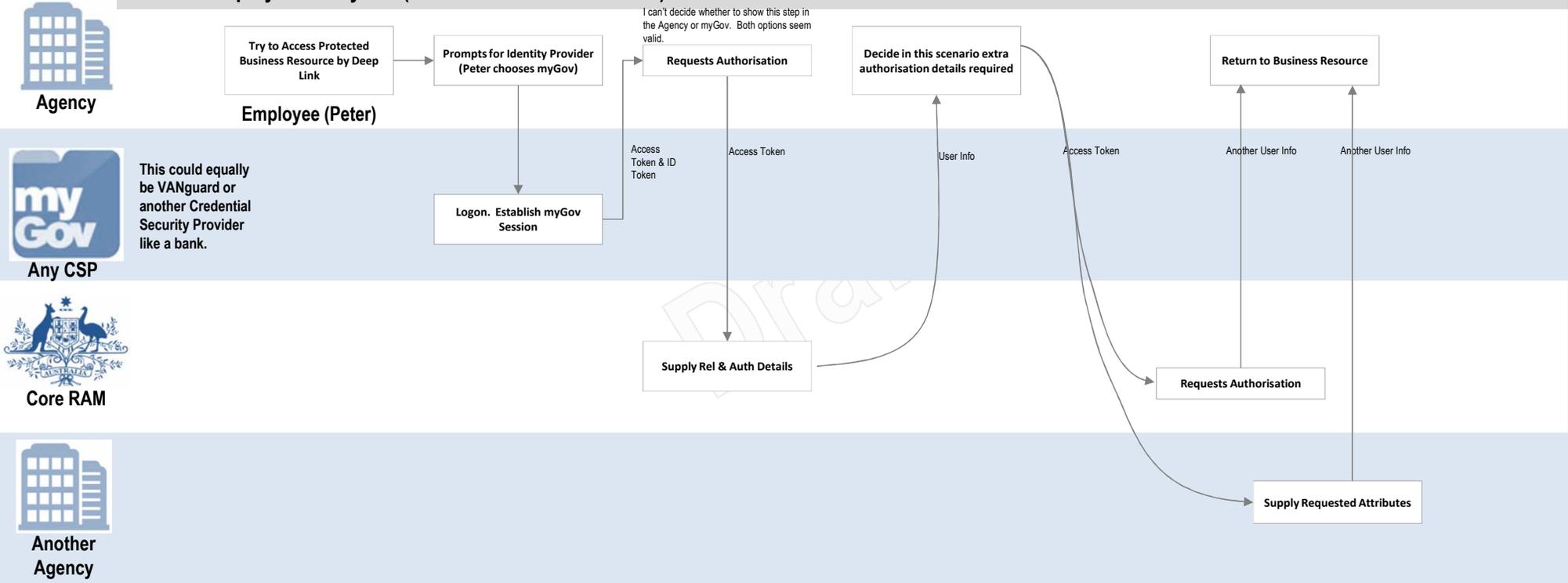
High level data/information flow

Flow 2 - An Employee (Peter) logs on via myGov to transact on behalf of a business

1. An employee lands in an agency service (after a google search) which forwards to myGov for logon
2. The employee logs on using myGov which uses RAM to inform the Agency the employee can represent the business
3. The Agency may make additional calls to RAM for more details about the relationship should the business function need that additional info



Access- Employee via myGov (note: this is not self service) – June '16



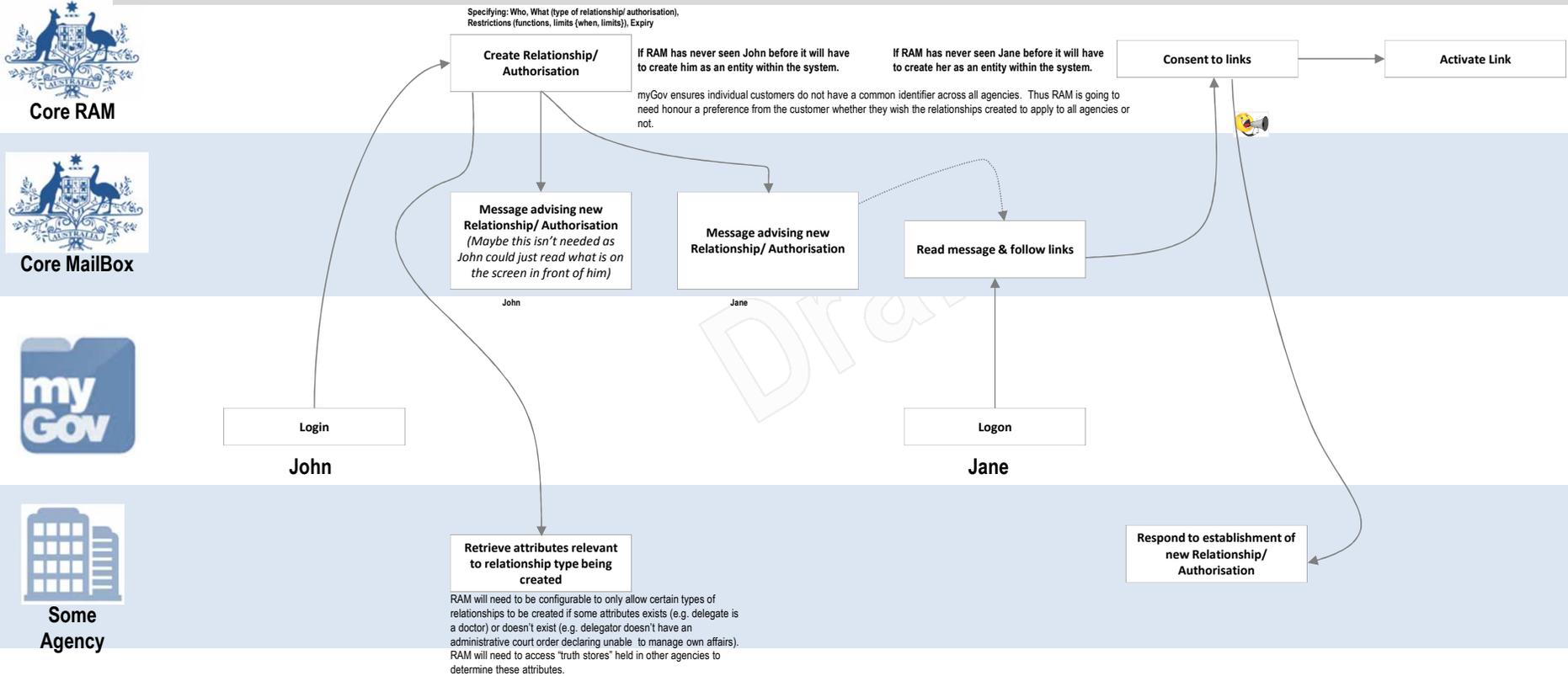
High level data/information flow

Flow 3 - John & Jane form a relationship and John delegates management of his Govt. functions to Jane

1. John access RAM through myGov and creates a delegation to Jane
2. Jane logs on to myGov and then uses Mailbox/ RAM functions to accept relationship.



Linking – Partner grants access via myGov/ RAM – June '16



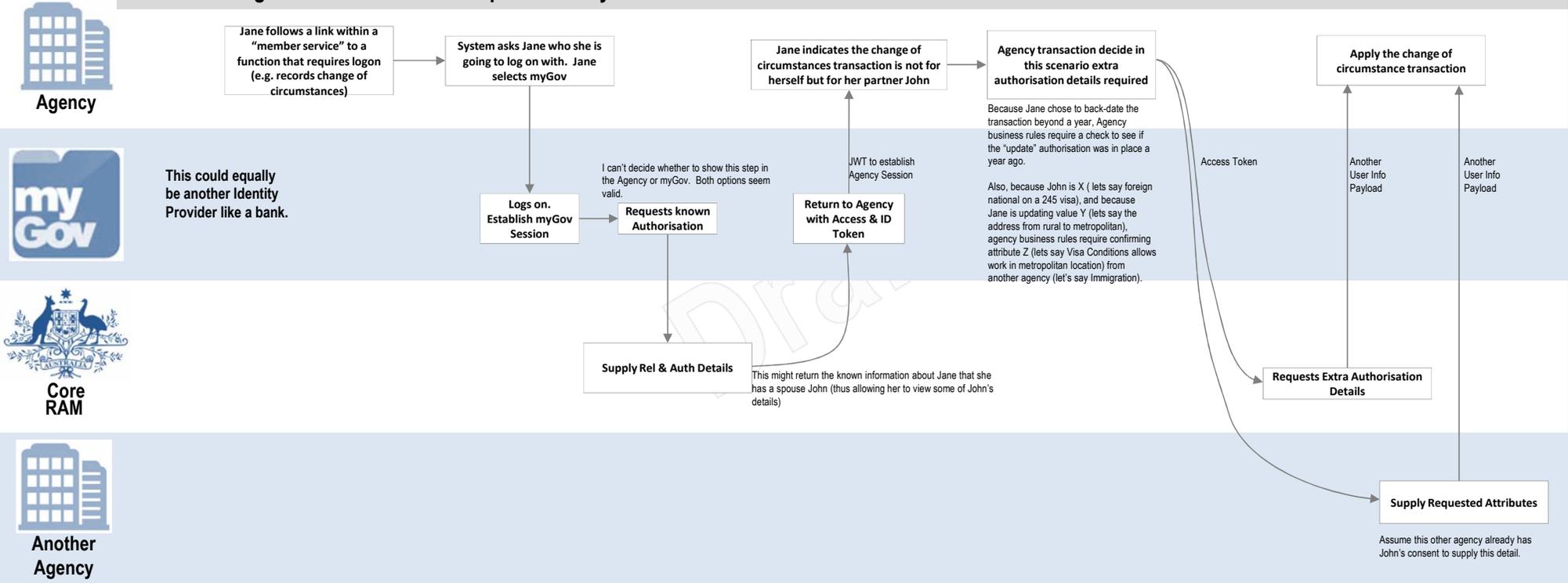
High level data/information flow

Flow 4 - A partner (Jane) in a relationship logs on via myGov to transact on behalf of their "spouse"

1. A partner starts in an agency service which forwards to myGov for logon
2. The partner logs on using myGov which uses RAM to inform the Agency the partner can represent their spouse
3. The agency may make additional calls to RA for more details about the relationship.



Access- Change of Circumstances for Spouse via myGov – June '16



High level data/information flow

Flow 5 - Shane is a small business owner and uses a tax agent. He feels his existing tax agent is overcharging so he decides to go to a new tax agent H&R Square. At H&R Square he is met by Peter, a qualified tax agent.



Delegation – Peter (Tax Agent) sets up relationship. – June '16



Core RAM



Core Mailbox



This could equally be another Identity Provider like a bank.

Login via accredited CSP
Tax Agent (Peter)



Specifying: Who, What (type of relationship/authorisation), Restrictions (functions, limits (when, limits)), Expiry

Create "Dummy" Relationship/ Authorisation

Peter is establishing a link between H&R Square and Shane & Shane's Business.
Peter can act-on-behalf of H&R Square to create relationships due to a recorded relationship in RAM between Peter & H&R Square.
Peter can link to Shane's business using its ABN as it is public.

Shane is a bit of a luddite and reject's Peter's offer to assist create a myGov Account. Peter creates a "dummy" relationship using a known Agency Identifiers – TFN – in this case as Peter is a TAX agent. The TFN is not stored in RAM, but just used in messages between systems.

Get Shane's RAM Link Id

RAM interrogates the dummy relationship(s) and initiates message to the myGov Identity Hub to obtain a RAM Link Id for Shane. This messages will have a context for when the reply is received.

Activate Dummy Relationship

As Peter is a Tax Agent, he is trusted to create this kind of relationship, hence RAM turns the dummy relationship into an "active relationship" using the supplied RAM Link Id. RAM had no permanent use for the TFN so it never stored it outside of messages. Thus the TNF is forgotten.

Message advising new Relationship/ Authorisation

Message advising new Relationship/ Authorisation

Send message to ATO to find ATO Link Id

Use ATO Link Id to find RAM Link Id

myGov creates an a/c for Shane with profile info supplied by ATO.
It returns a link it to ATO and a RAM Link Id to RAM (supplying the context info provided to it from RAM via the ATO).

Use TFN to find ATO Link Id

Retrieve attributes relevant to relationship type being created

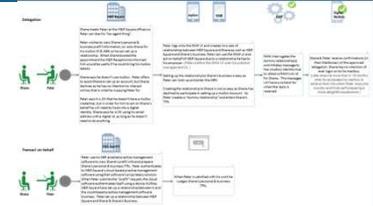
Respond to establishment of new Relationship/ Authorisation

ATO will look up its records and finds no Link Id against the Shan's Record.
ATO sends a message to myGov to create a new myGov Account and forward a RAM Link Id back to RAM.

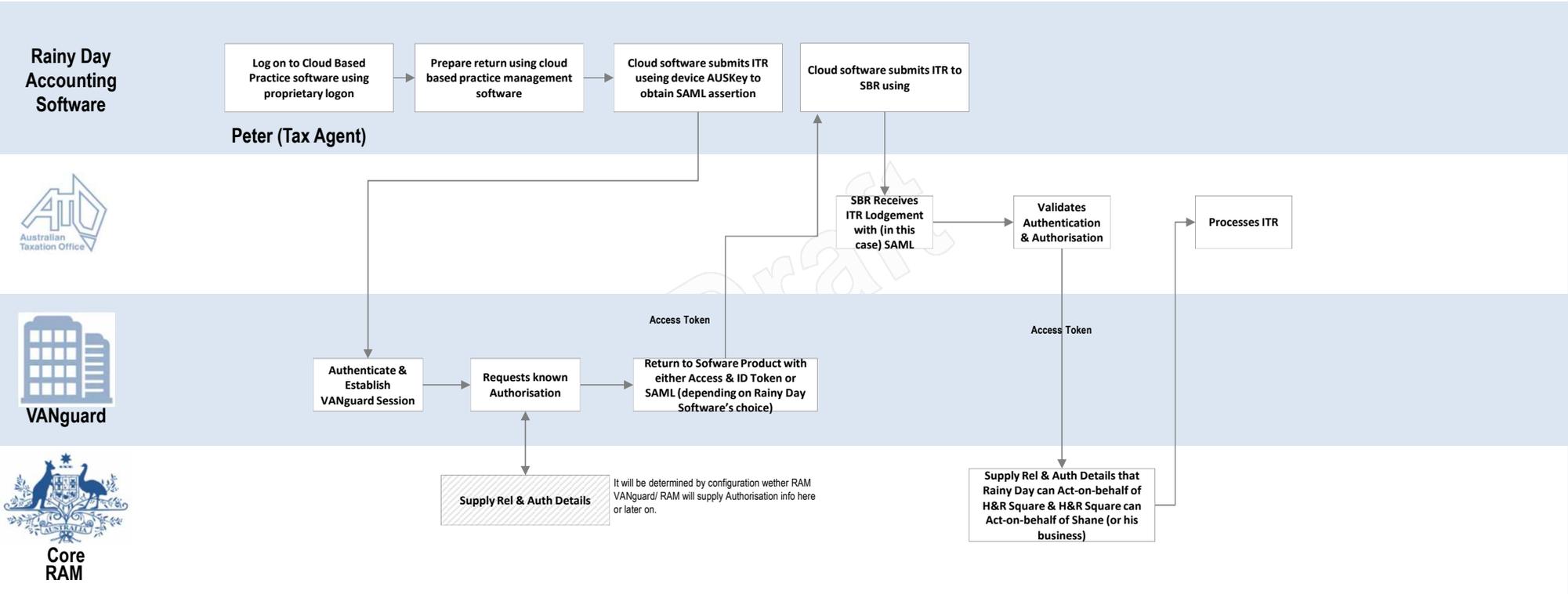
RAM will need to be configurable to only allow certain types of relationships to be created if some attributes exists (e.g. delegate is a doctor) or doesn't exist (e.g. delegator doesn't have an administrative court order declaring unable to manage own affairs).
RAM will need to access "truth stores" held in other agencies to determine these attributes.

High level data/information flow

Flow 6 - Shane is a small business owner and uses a tax agents. He feels his existing tax agent is overcharging so he decides to go to a new tax agent H&R Square. At H&R Square he is met by Peter, a qualified tax agent.

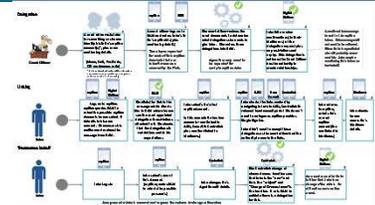


Access– Lodge an ITR – June '16

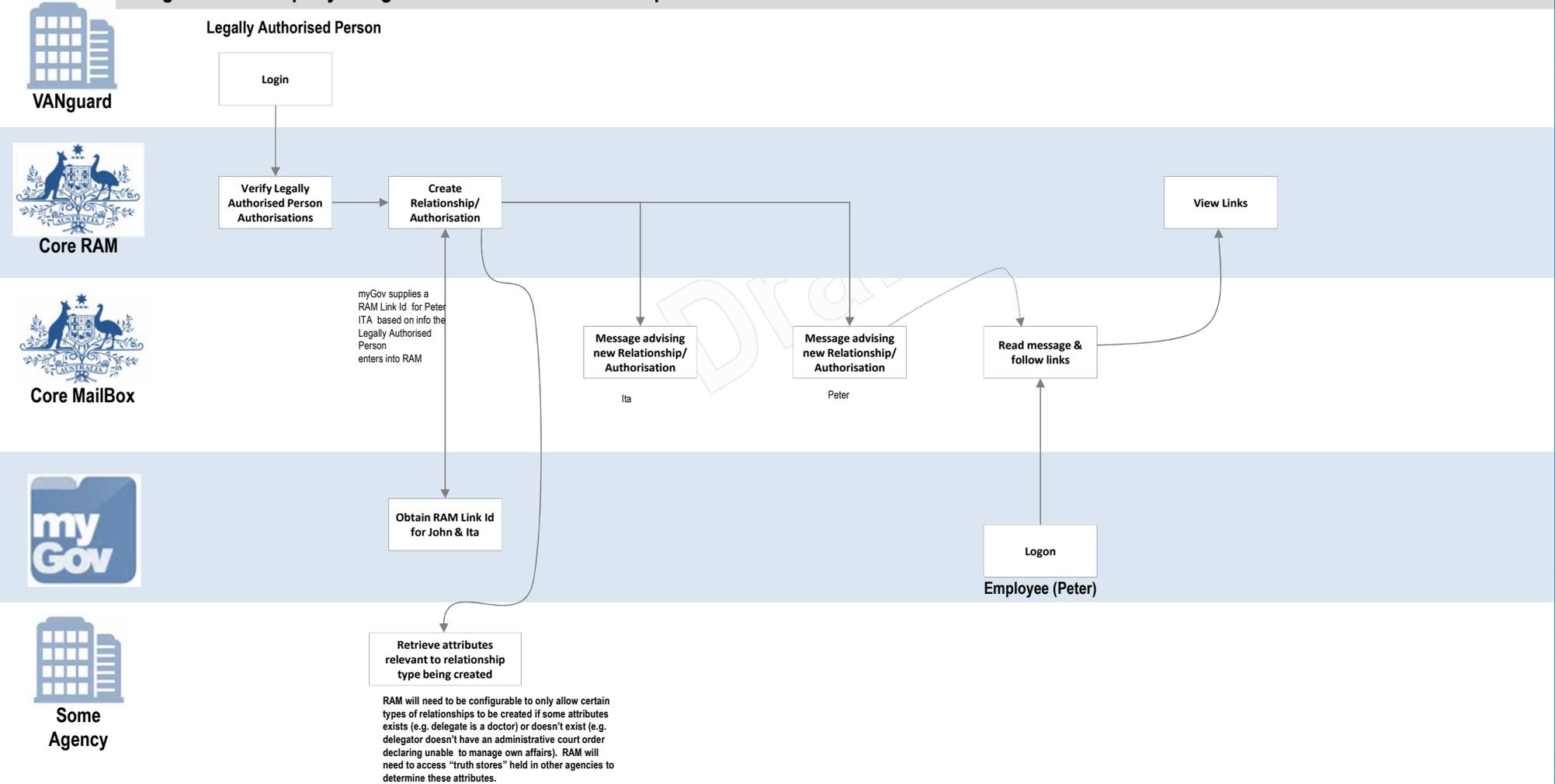


High level data/information flow

Flow 7 - John's widowed mother, Ita, had a stroke and is left in a nursing home unable to make her own decisions. John obtains appropriate powers of attorney through relevant processes. John wishes to update Ita's aged benefit details. John & Ita each have myGov Account. John knows the details for both. Ita has two myGov Accounts, one linked to ATO, Centrelink & Yass Council, the other linked to Medicare.

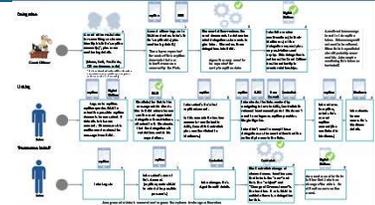


Delegation – Third party delegator creates RAM Relationship – June '16

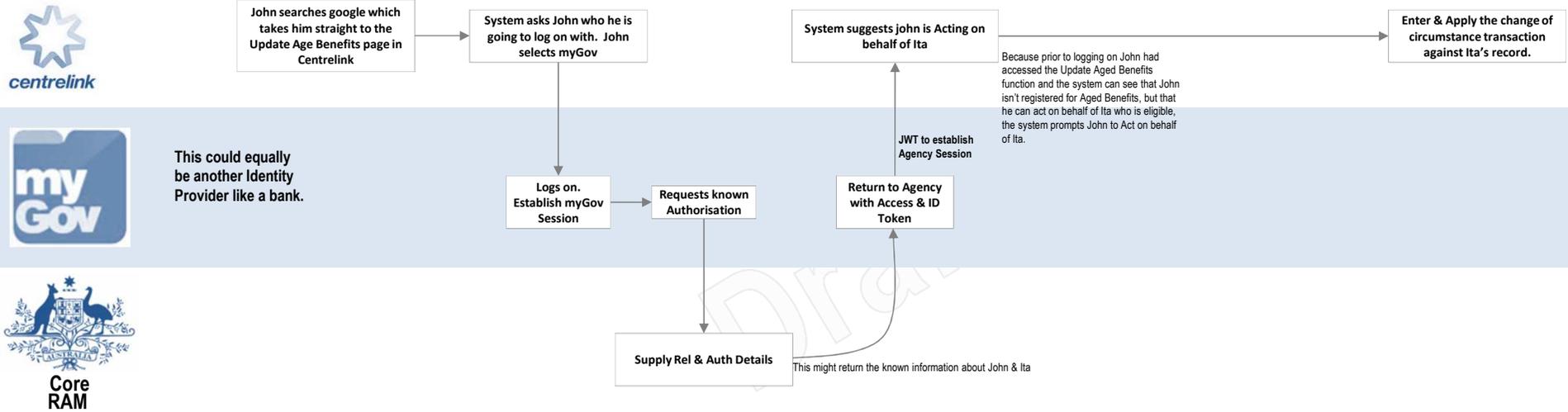


High level data/information flow

Flow 8 - John's widowed mother, Ita, had a stroke and is left in a nursing home unable to make her own decisions. John obtains appropriate powers of attorney through relevant processes. John wishes to update Ita's aged benefit details. John & Ita each have myGov Account. John knows the details for both. Ita has two myGov Accounts, one linked to ATO, Centrelink & Yass Council, the other linked to Medicare.

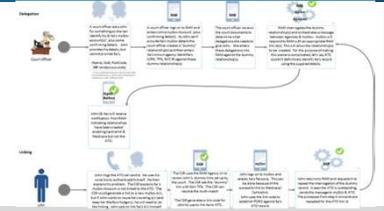


Access- Peter uses Third Party created delegation to update Ita's Details - June '16

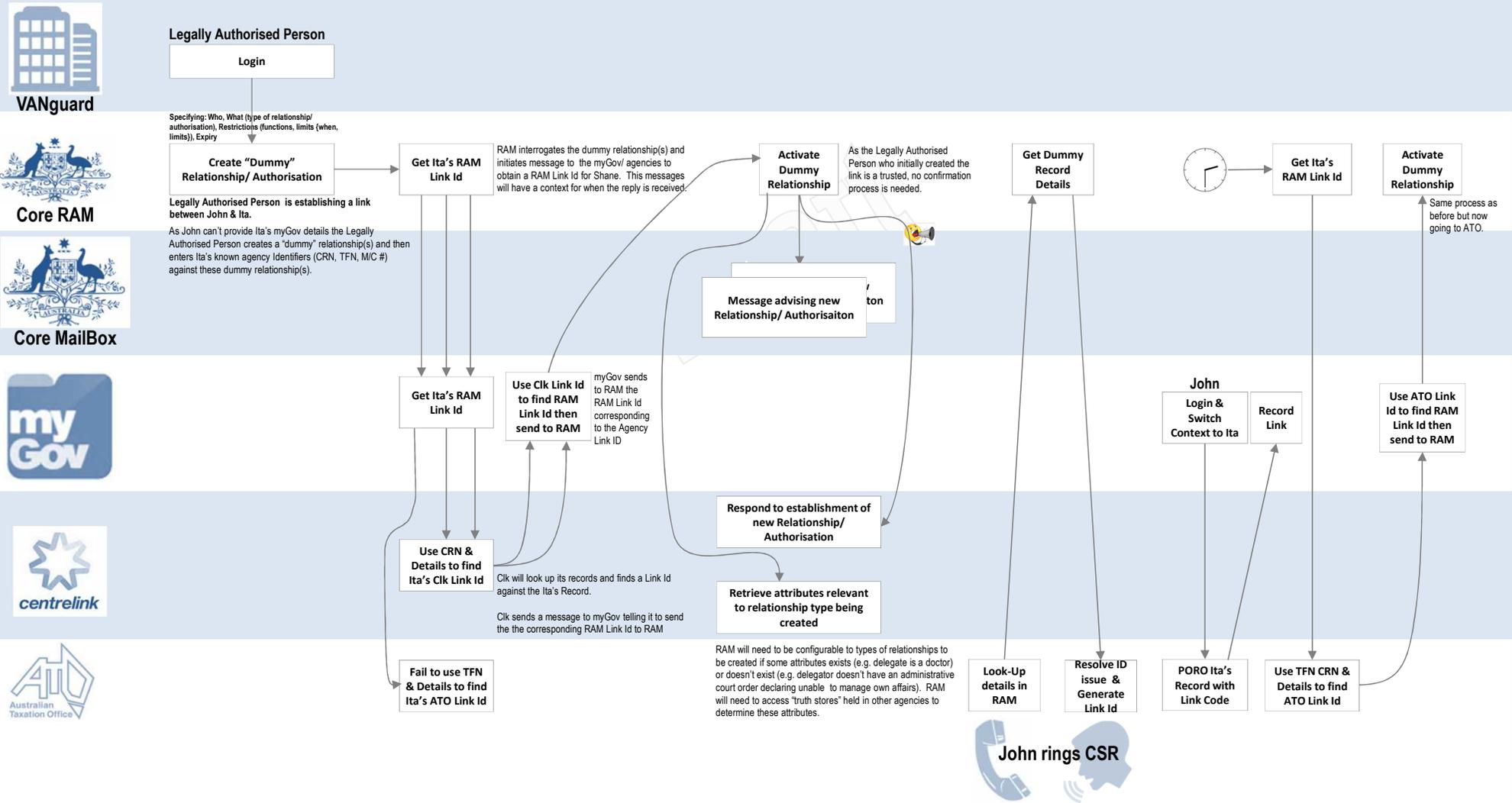


High level data/information flow

Flow 9 - John's widowed mother, Ita, has had a stroke and is left incapacitated in a nursing home. John obtains appropriate powers of attorney through relevant processes. Ita didn't anticipate her infirmity and so didn't tell John her digital identities she used for Medicare & Centrelink, also, she never linked her identity to the ATO. Thus John's life is more complicated.



Delegation – Third Party Delegator Sets up relationship with unknown myGov IDs. – June '16



Principles & NFR identified during costing workshop

RAM Principles:

Where a relationship (or access based attribute) exists in some existing "truth store", RAM will leverage it via federation.

The goal is not to replicate data into RAM, as that only introduces complexity, instead the goal would be either:

- for RAM to return a reference (URI) to the relying party so that the relying party can directly query the truth store (in a consistent & standards compliant attribute query fashion) using the "authentication token"; or
- for RAM to perform the query to the truth store, possibly in some "one-off" fashion mutually convenient to RAM and the truth store, and for RAM to return the data to the relying party in a consistent & standards compliant fashion

Where no adequate existing truth store exists for some relationship (or access based attribute), it will set up through RAM

- A store would be viewed inadequate if it was unable to meet the non-functional requirements such as availability, throughput, etc.

Non-Functional Requirements

RAM will be a collection of UI/ Data Store/ Processes (collaborations)

The UI will consist of:

- Customer facing ur for setting up relationships
- Agency facing – particularly for small agencies
- Admin UI

There will be a taxonomy of services (relationships & authorisations) that may be granted. This will be determined as a BAU activity of RAM.

There will be a need to adopt suitable interchange standard(s)

Assume 3 different stds to access truth stores

All authorisations requests & responses will need to be audited.

Availability:

Target availability will be 99.99% (based on myGov)

Response:

- 95% will respond within 0.1 sec from time hits firewall to return to fire wall. This 0.1 may be extended by 0.5 sec for each truth store that needs to be hid.
- 98% will respond within 1 second + 0.5 sec for each truth store
- 99% will respond within 5 secs + 0.5 sec for each truth store

Throughput

- Expected volume metrics after 3 years will be based on the formula
- myGov authentications + VANguard authentications times 5 (i.e. a session is expected on average to need 5 RAM queries)

Volumes

- 25 million (20 million individuals + 5 million non-individuals times 10 relationships times 5 attributes)