

# Build3 Stuff3

Tamed Eventual Consistency

## Rules

If you want to leave, please do so

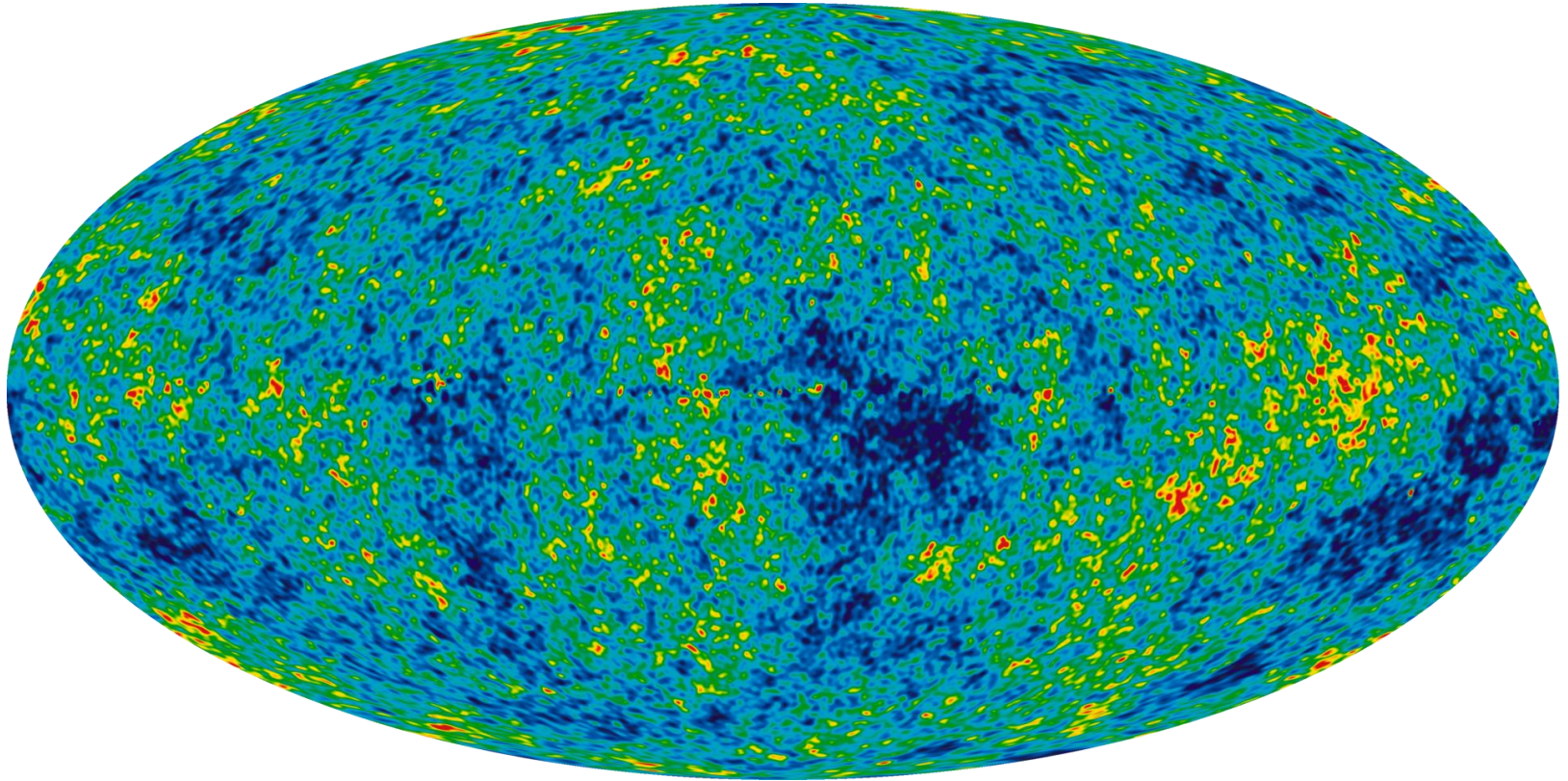
If you have a question, interrupt

Me: Yves Lorphelin  
I build : BLOBA's  
Current Domain: HR  
aka: ylorph

“In Event Sourced systems,  
latency is **feared** by the developers”

“Eventual Consistency is **unacceptable**  
for Business”

Anonymous on the DDD-CQRS-ES slack  
<https://ddd-cqrs-es.herokuapp.com/>



Credit: NASA / WMAP Science Team  
[https://map.gsfc.nasa.gov/media/121238/ilc\\_9yr\\_moll4096.png](https://map.gsfc.nasa.gov/media/121238/ilc_9yr_moll4096.png)

Latency is a fundamental property

Latency is a fundamental property  
Mature processes deal with it

Replace processes with businesses

Latency definition ?



Latency is a time interval between the stimulation and response.

A time delay between the cause and the effect.

[https://en.wikipedia.org/wiki/Latency\\_\(engineering\)](https://en.wikipedia.org/wiki/Latency_(engineering))

# An example

## The Mailing List

Eventual Consistency definition ?

Eventual consistency is a consistency model used in distributed computing to achieve high availability that informally guarantees that, if no new updates are made to a given data item, eventually all accesses to that item will return the last updated value

[https://en.wikipedia.org/wiki/Eventual\\_consistency](https://en.wikipedia.org/wiki/Eventual_consistency)

When different part of the system(\*)  
do not share the same state of something

(\*) Please define system

Eventual Consistency is a fundamental  
property  
There is no central control

Eventual Consistency is a fundamental  
property

Mature processes deal with it

Replace processes with businesses

# An Example

## A law

Replace processes with businesses



# An Example Bank Account

Replace processes with businesses

# An Example

## ~~Bank Account~~

## Leasing

Replace processes with businesses

Leasing  
Requested

Denied

Granted

Undecided

Leasing  
Requested



Denied

Granted

Undecided

Leasing  
Request

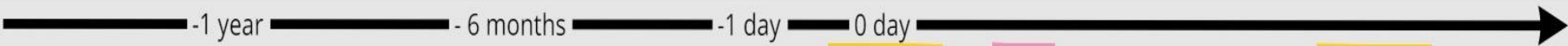
Last  
annual  
account

Bank  
Rating

Commercial  
Analytics

Obligo





Leasing  
Requested



Denied

Granted

Undecided

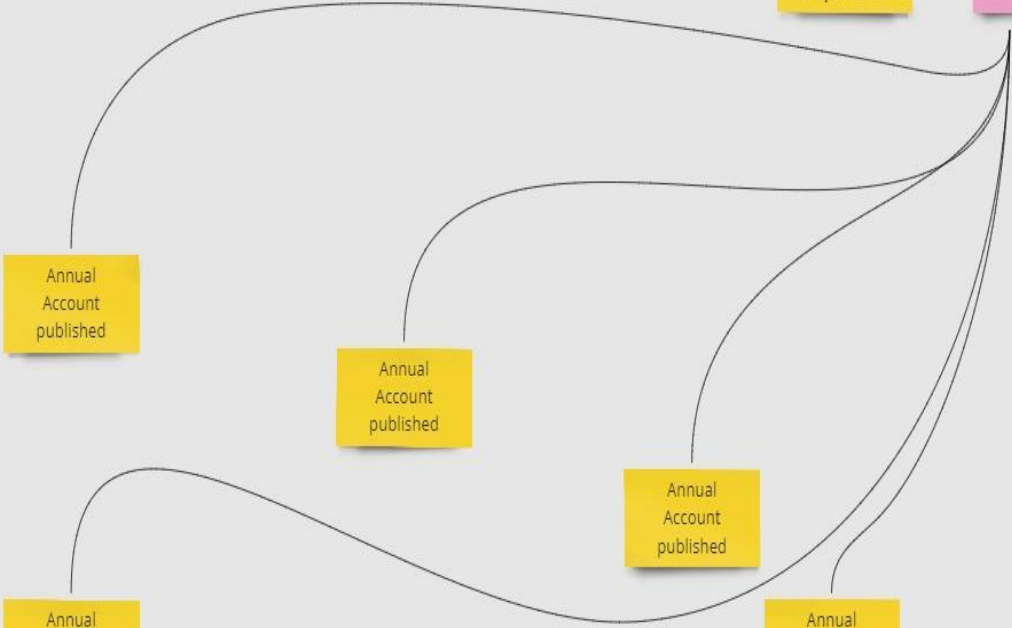
Annual  
Account  
published

Annual  
Account  
published

Annual  
Account  
published

Annual  
Account  
published

Annual  
Accounts  
Corrected



An Example  
A Talk abstract

[Yves Lorphelin](#)  
[@vlorph - Tamed](#)  
[Eventual Consistency](#)

[2:30pm - 3:20pm](#)

Jurij Nesvat - The  
Cornerstones of the  
Accessibility...

2:30pm - 3:20pm

[Add to My Sched](#)

 [Link](#)

"In Event Sourced systems, Latency is feared by the Developers, and Eventual Consistency is unacceptable for Business"

Most of us have been taught that users want to see the result of actions in our systems immediately.

And that therefore a typical transactional system is a must.

And so, we stopped thinking about time.

And so, we stopped asking:

- \* How long are you willing to wait
- \* Does it make sense to show an immediate response

Event sourcing, and the associated use of CQRS (Command Query Responsibility Segregation) has put time back as a first class citizen in our systems.

And made the need of discussions about latency explicit.

Latency and Eventual consistency is not a fatality.

*It is a matter of modelling*

Thursday November 15, 2018 2:30pm - 3:20pm

Latency & Eventual Consistency  
happen in **all** systems



That database ?

That database !  
Once the connection is gone

That database  
Optimistic locks !

That database  
Optimistic locks !  
Pessimistic locks!

That database !  
Once it's shared

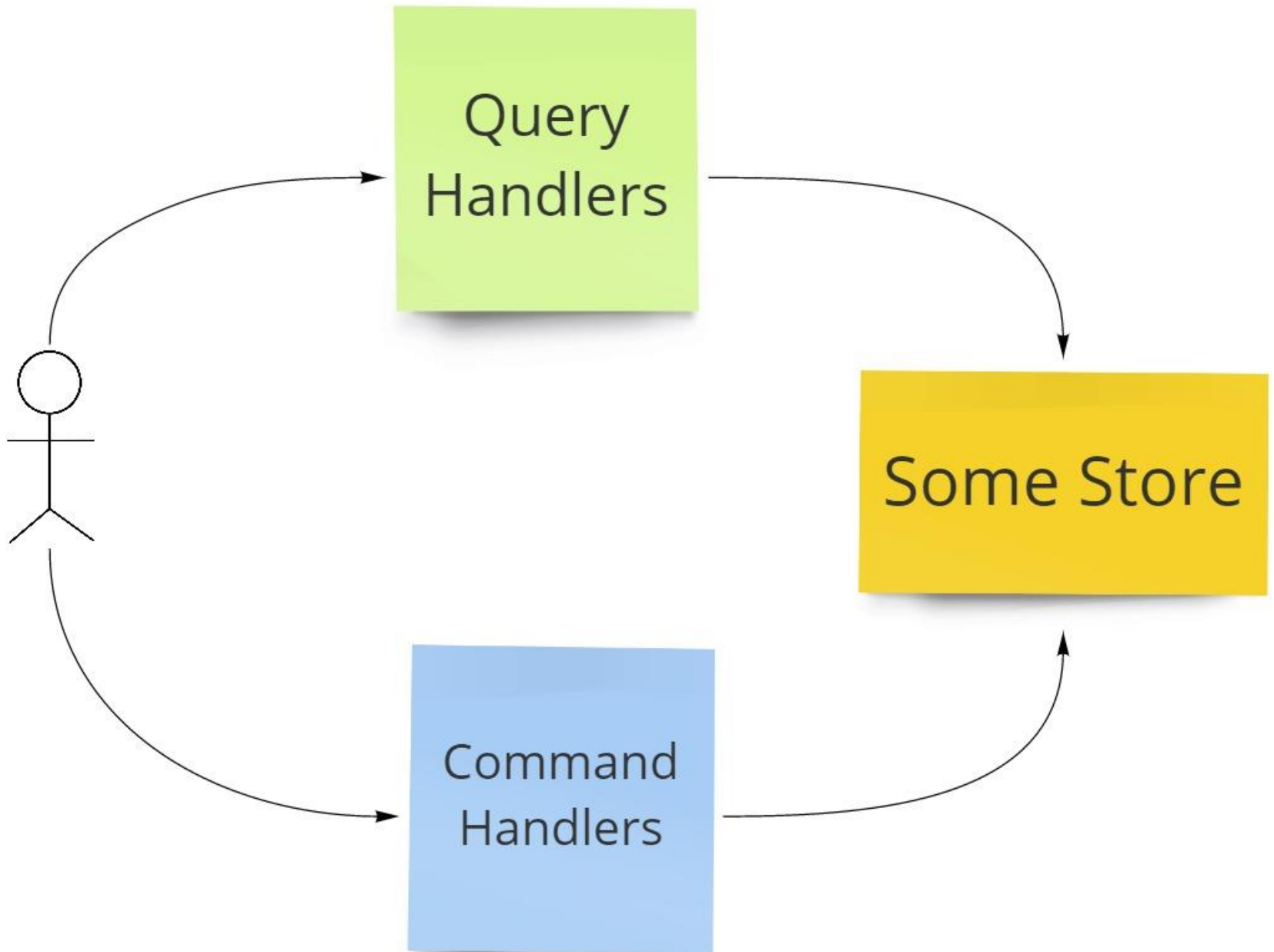
We need to cope with it  
People fear it, because we make it explicit

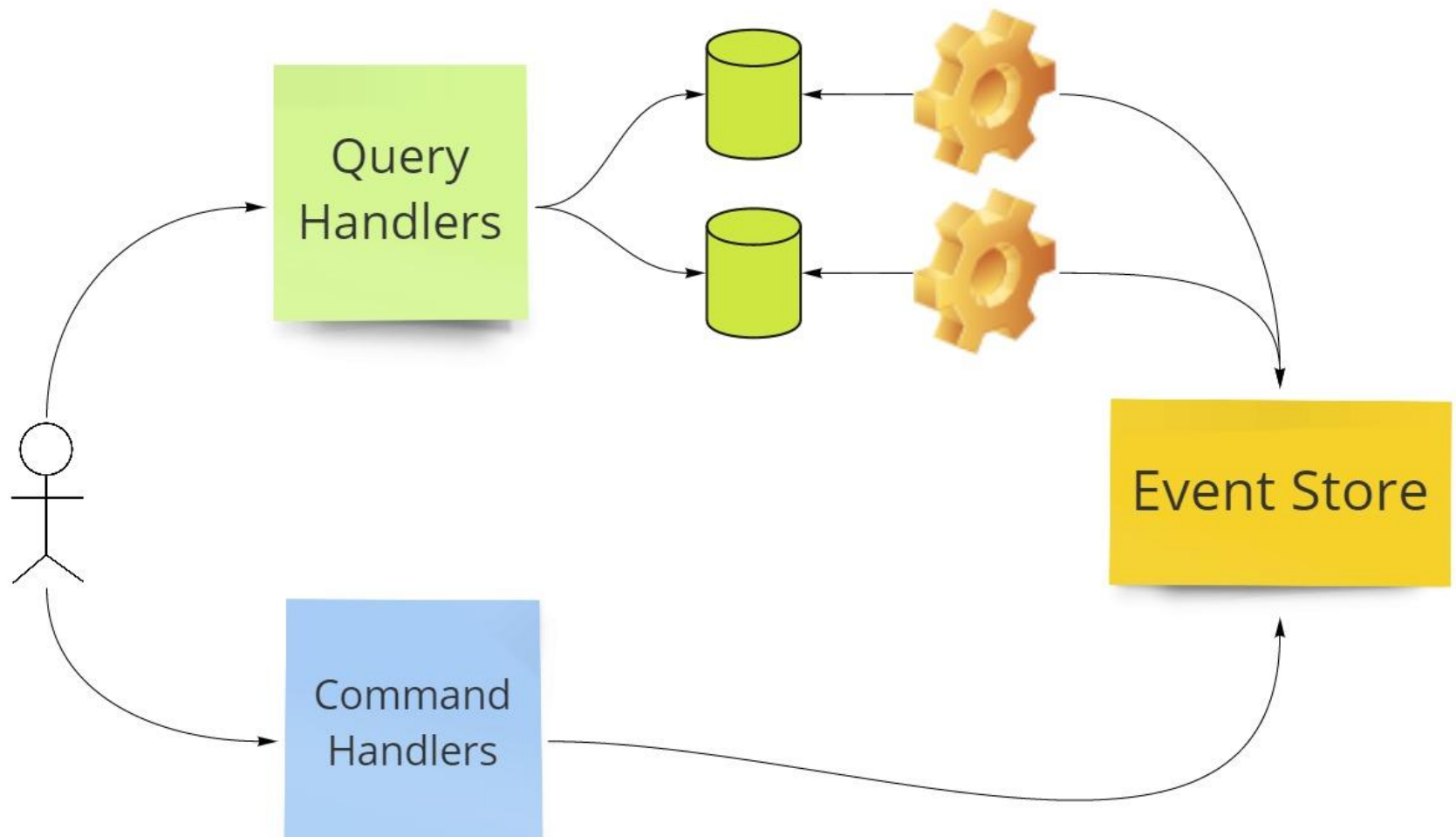
We need to cope with it  
Minimize the consequences

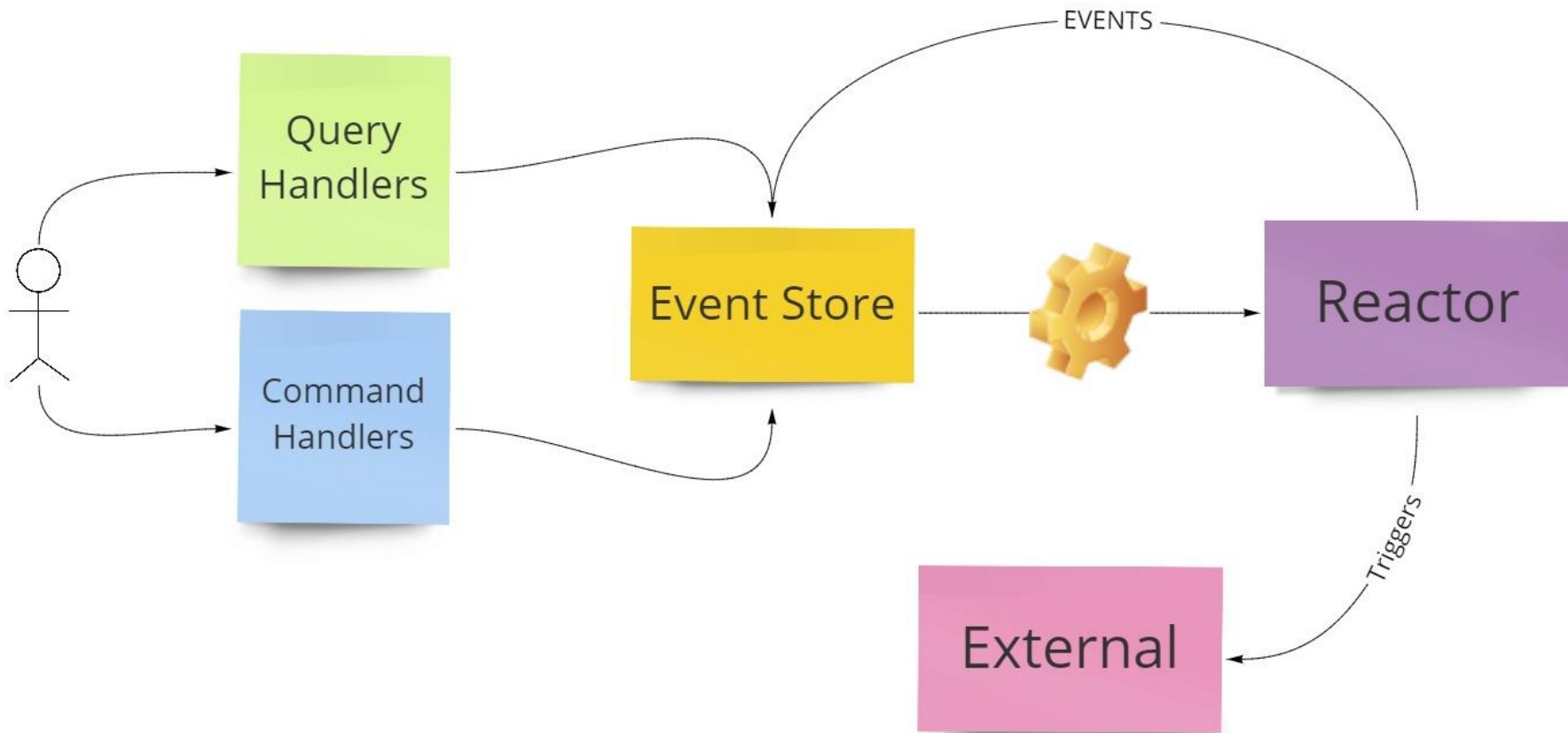
We need to cope with it  
Minimize the chance of it happening



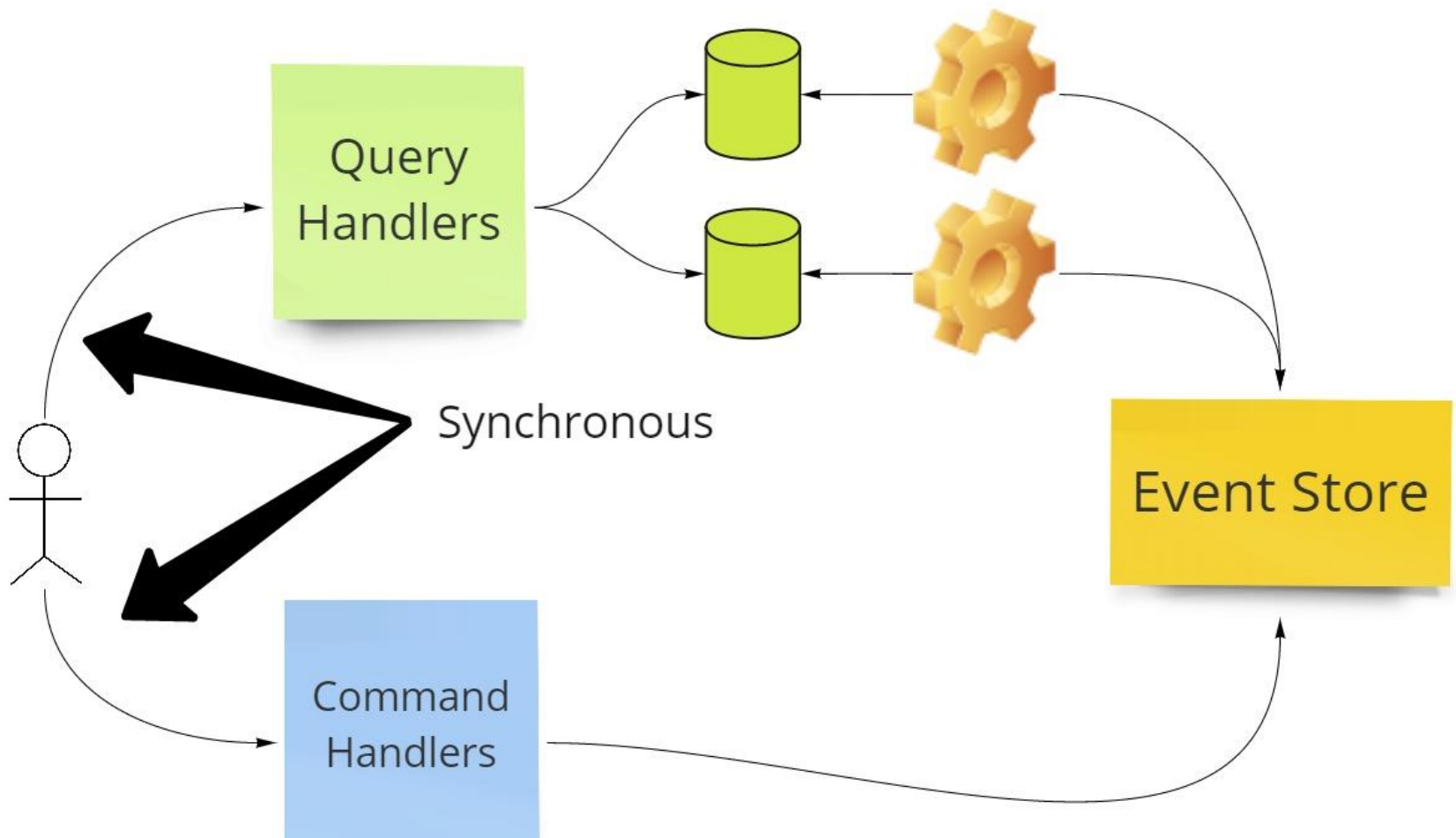
Where in CQRS is there  
latency & Eventual Consistency ?

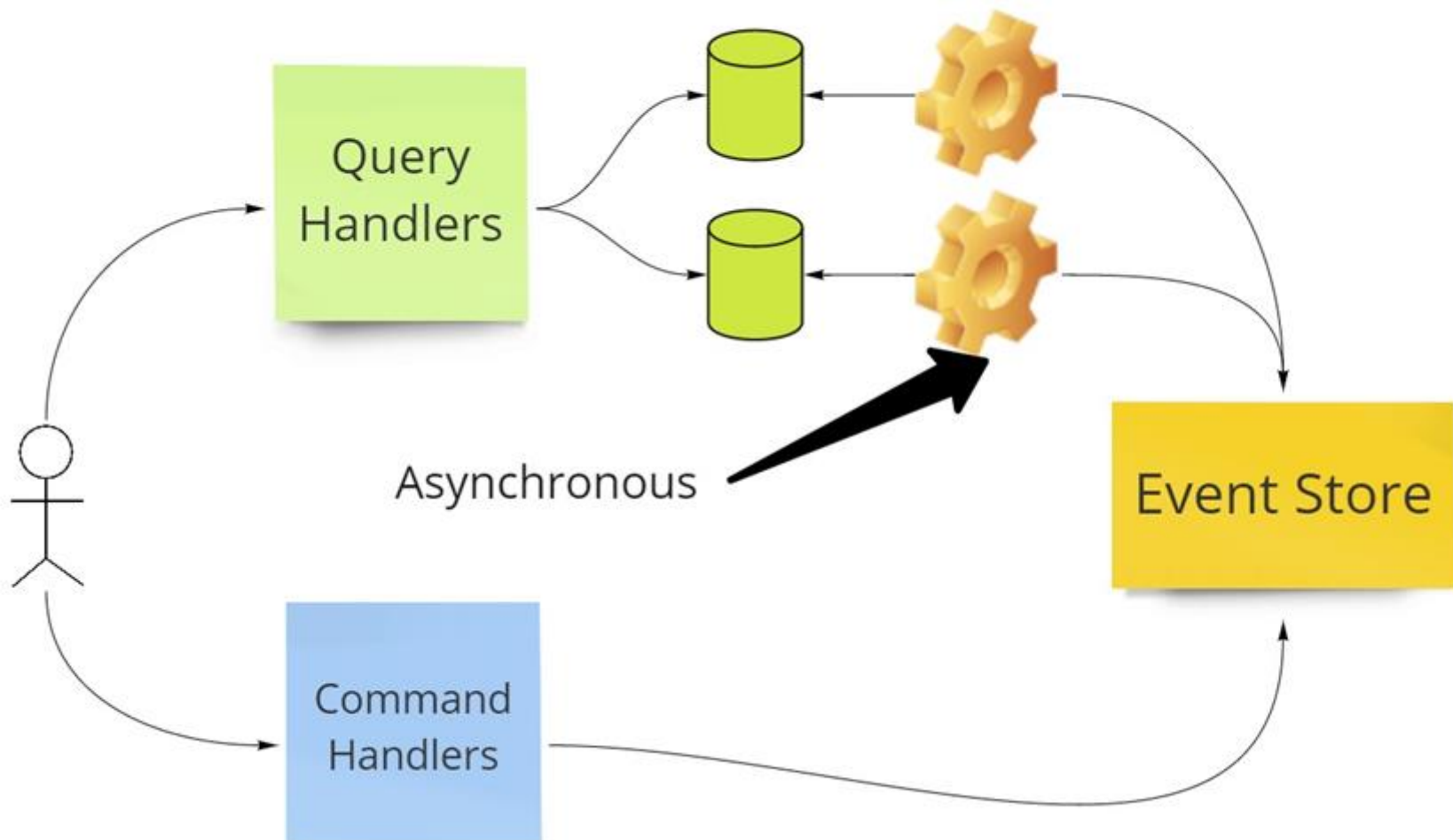


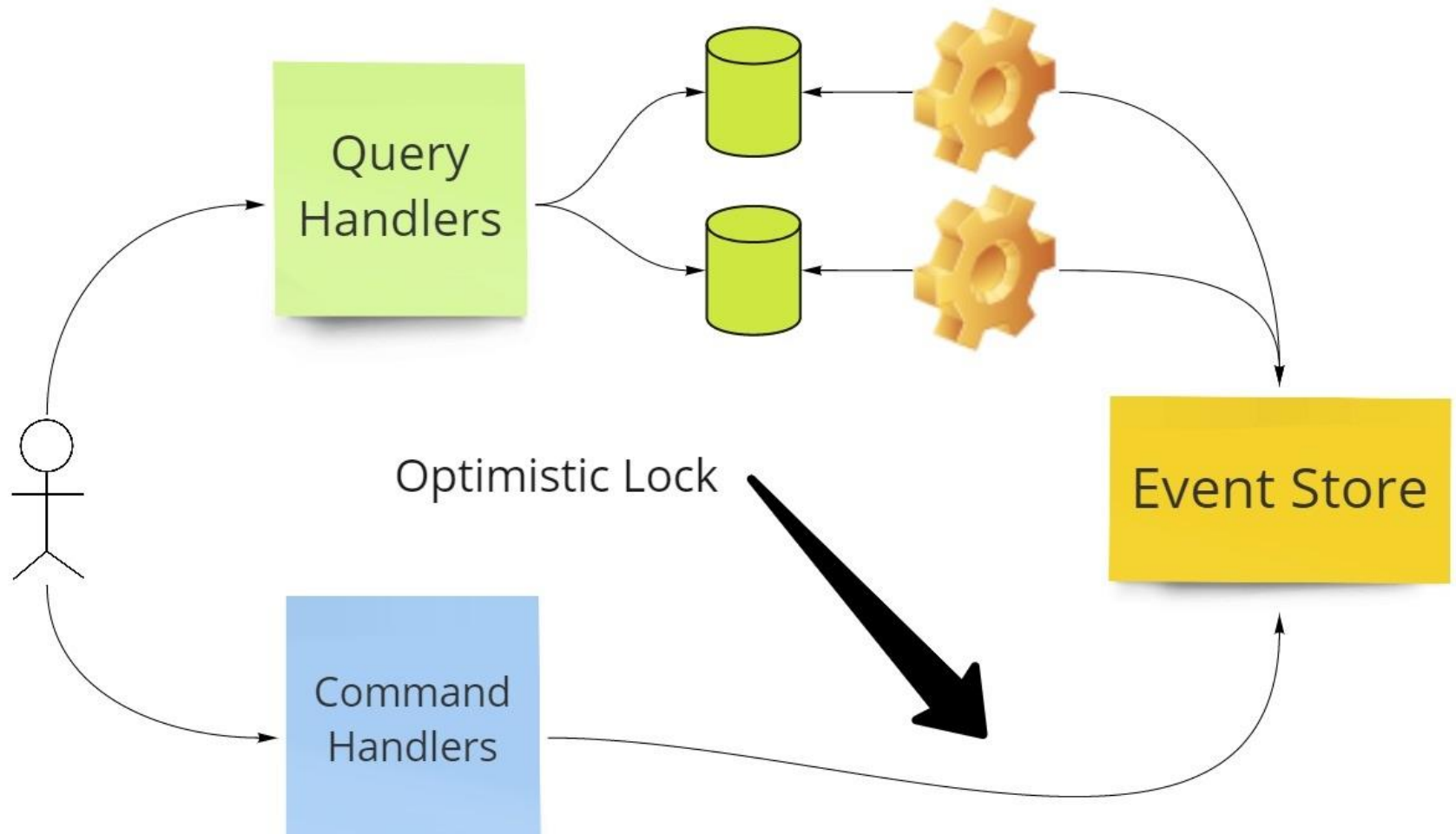




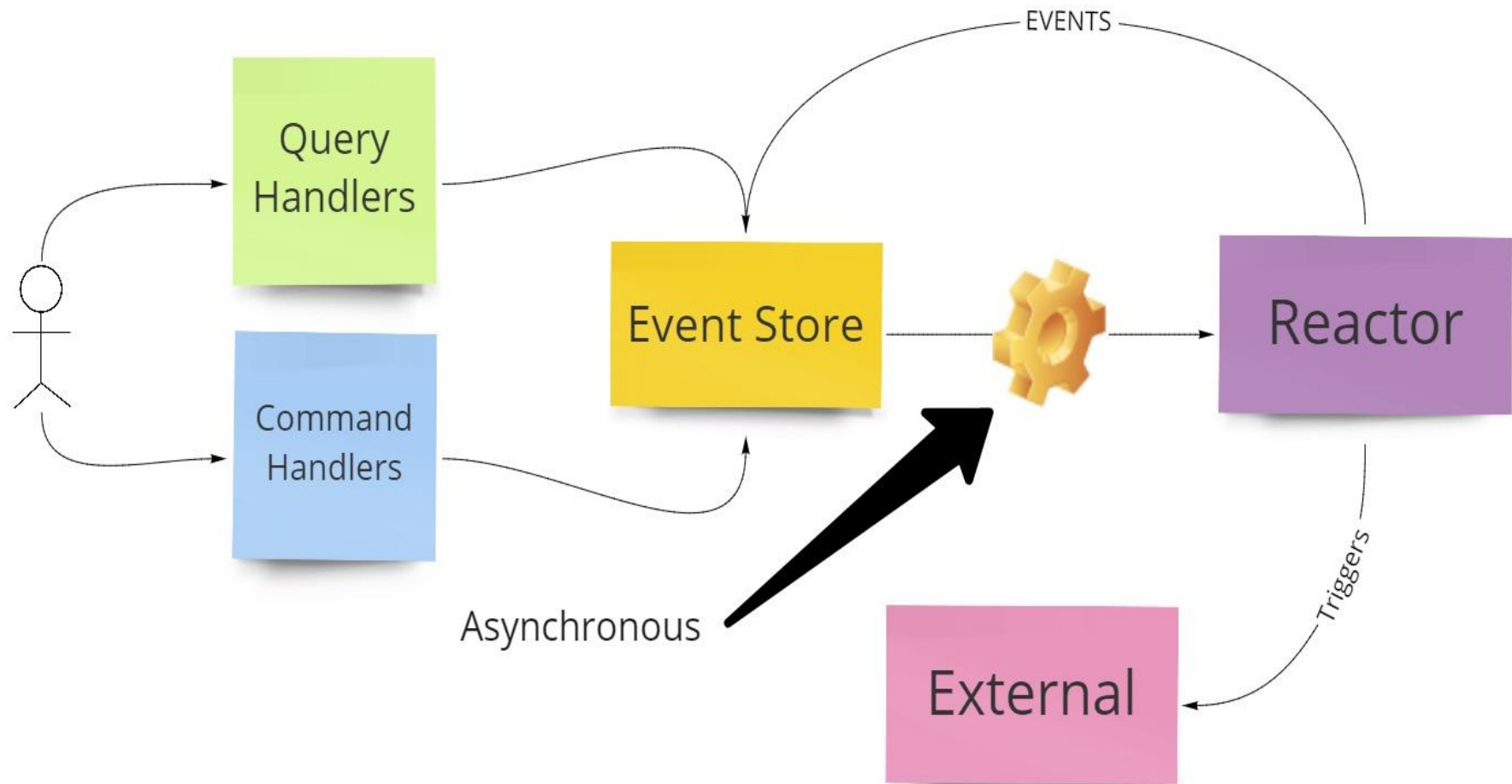
Where in CQRS is there  
latency & Eventual Consistency ?



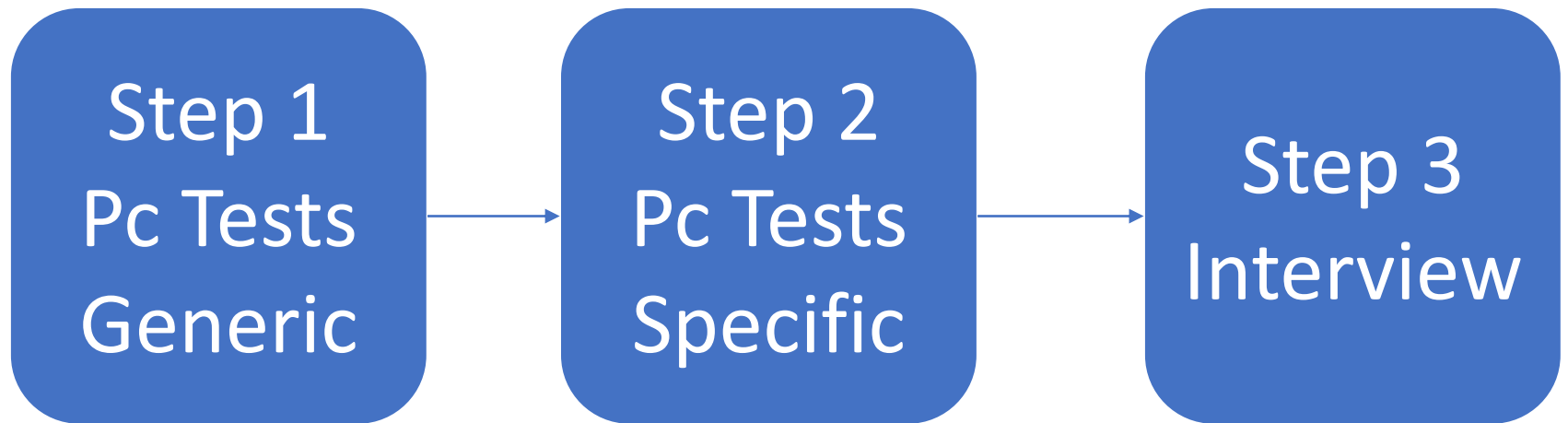








Selection process  
Exemptions



How Much  
Work ?

What Do I have  
to work on ?

## Beheer benoeringen

756

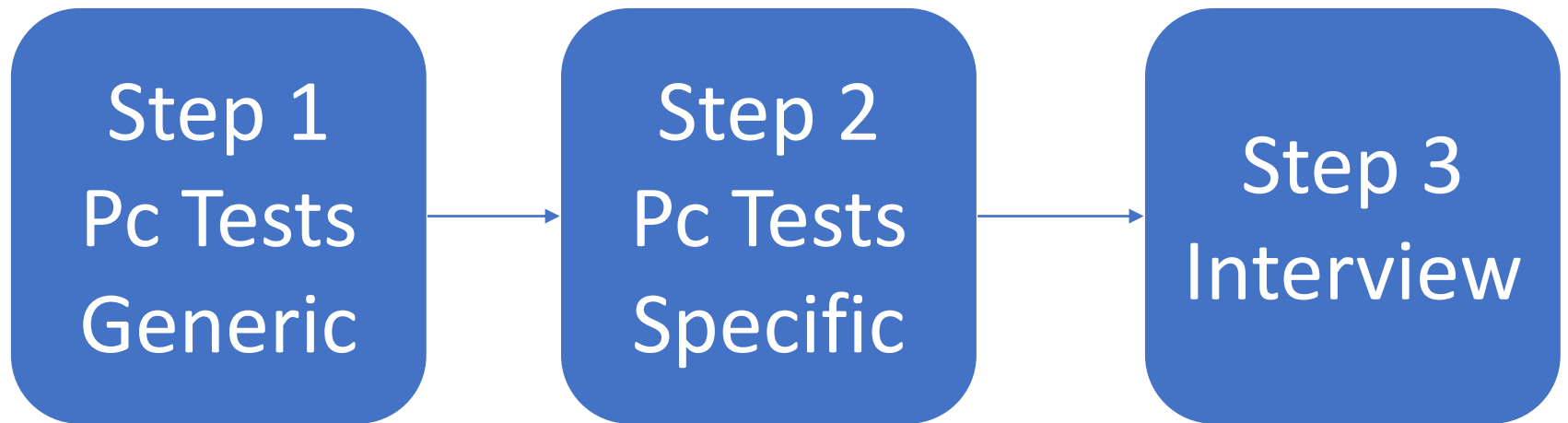


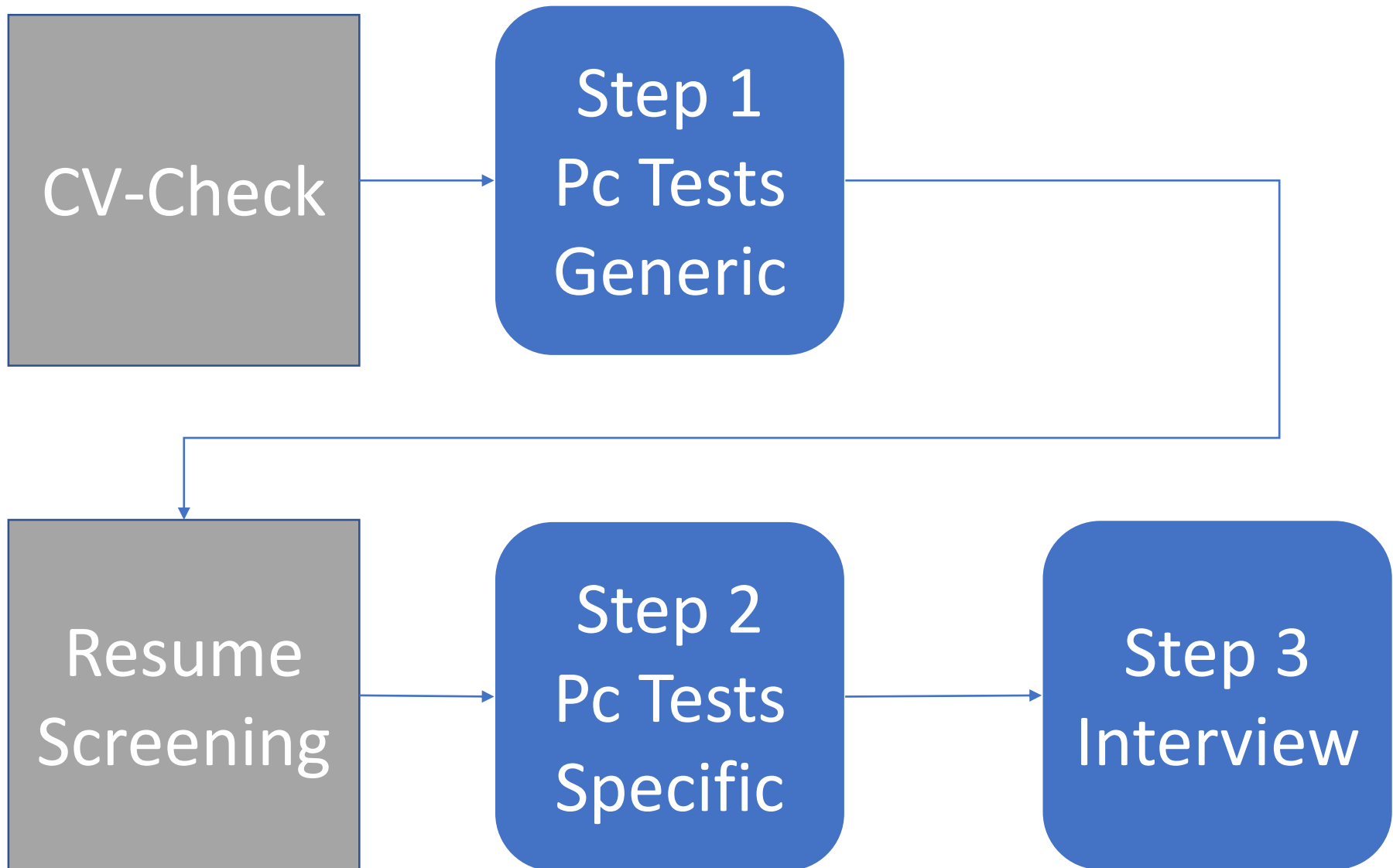
**Te screenen  
benoeringen**



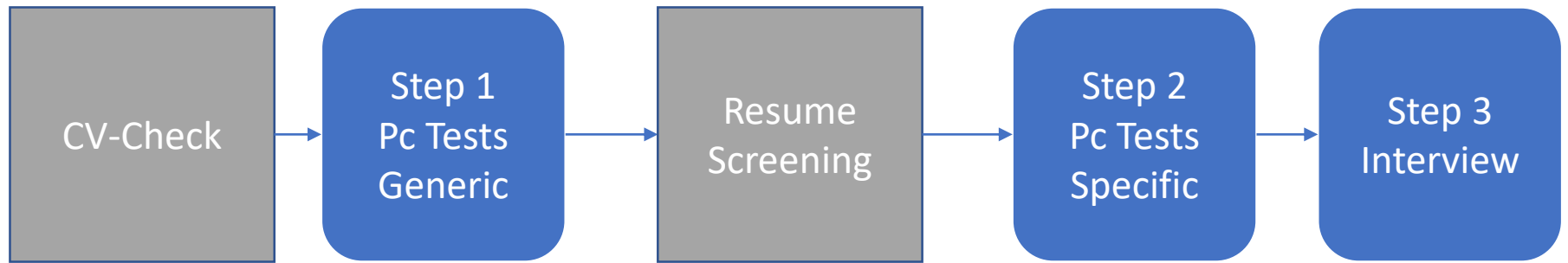
**Zoek dossier**

◆RRN	Voornaam	Naam	Selectienummer	Type procedure	Type job	◆ Benoemingsbesluit?	In behandeling
55*****	C*****	*****	AFG18710	Managementjob	Statutair	✓	✓
74*****	*****	*****	AFG18713	Managementjob	Statutair	✓	
73*****	*****	*****	AFG18114	Standaard	Statutair		✓
84*****	*****	*****	ANG18145	Standaard	Statutair	✓	✓
66*****	*****	*****	AFG18715	Managementjob	Statutair		

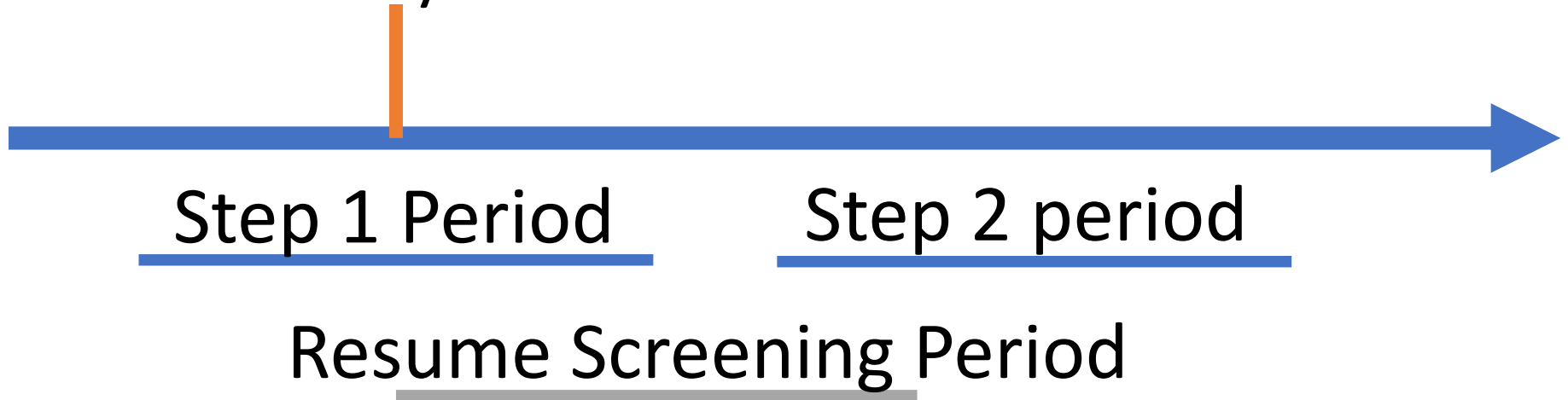








Last Day of Enrollments





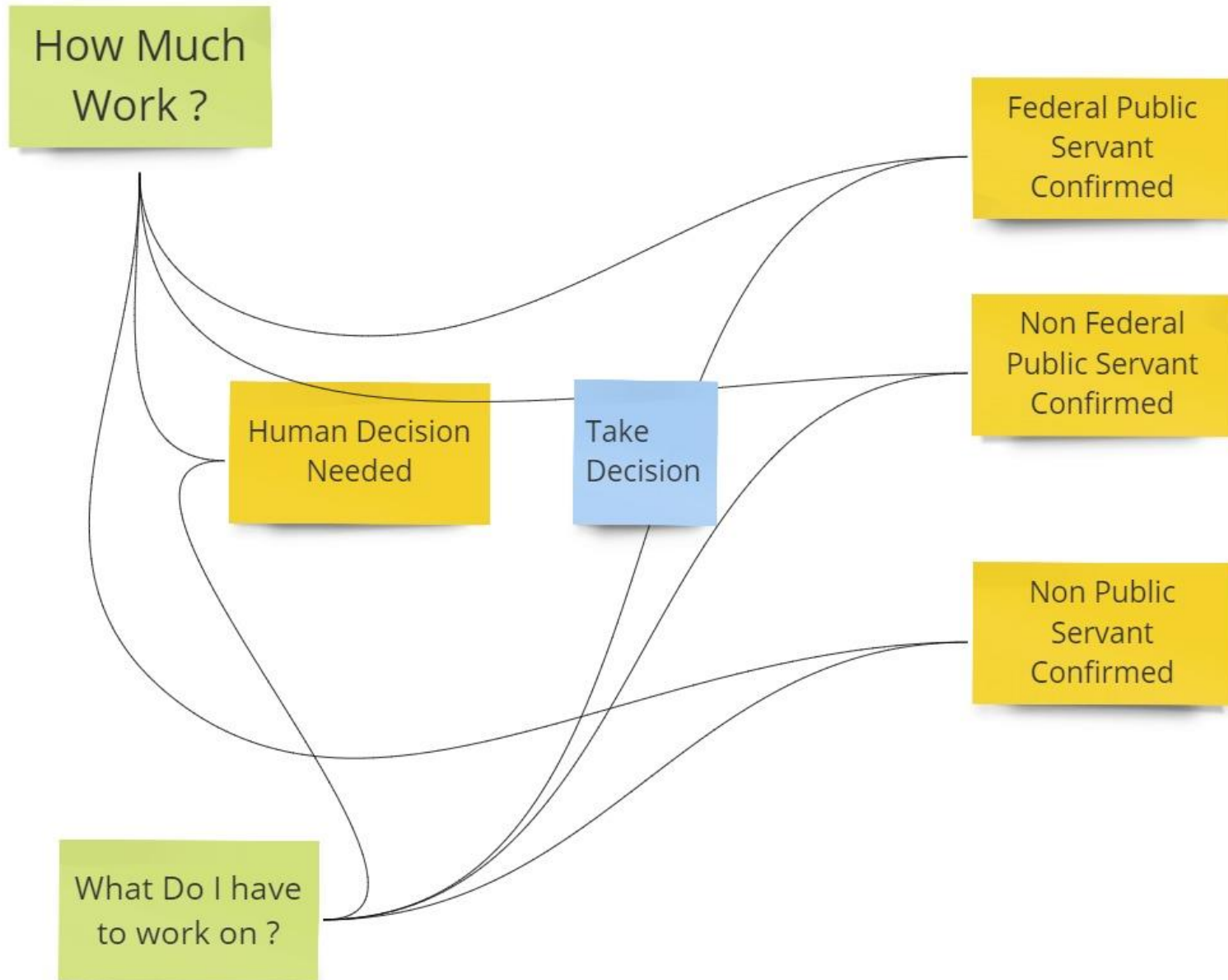
## Benefit of the doubt

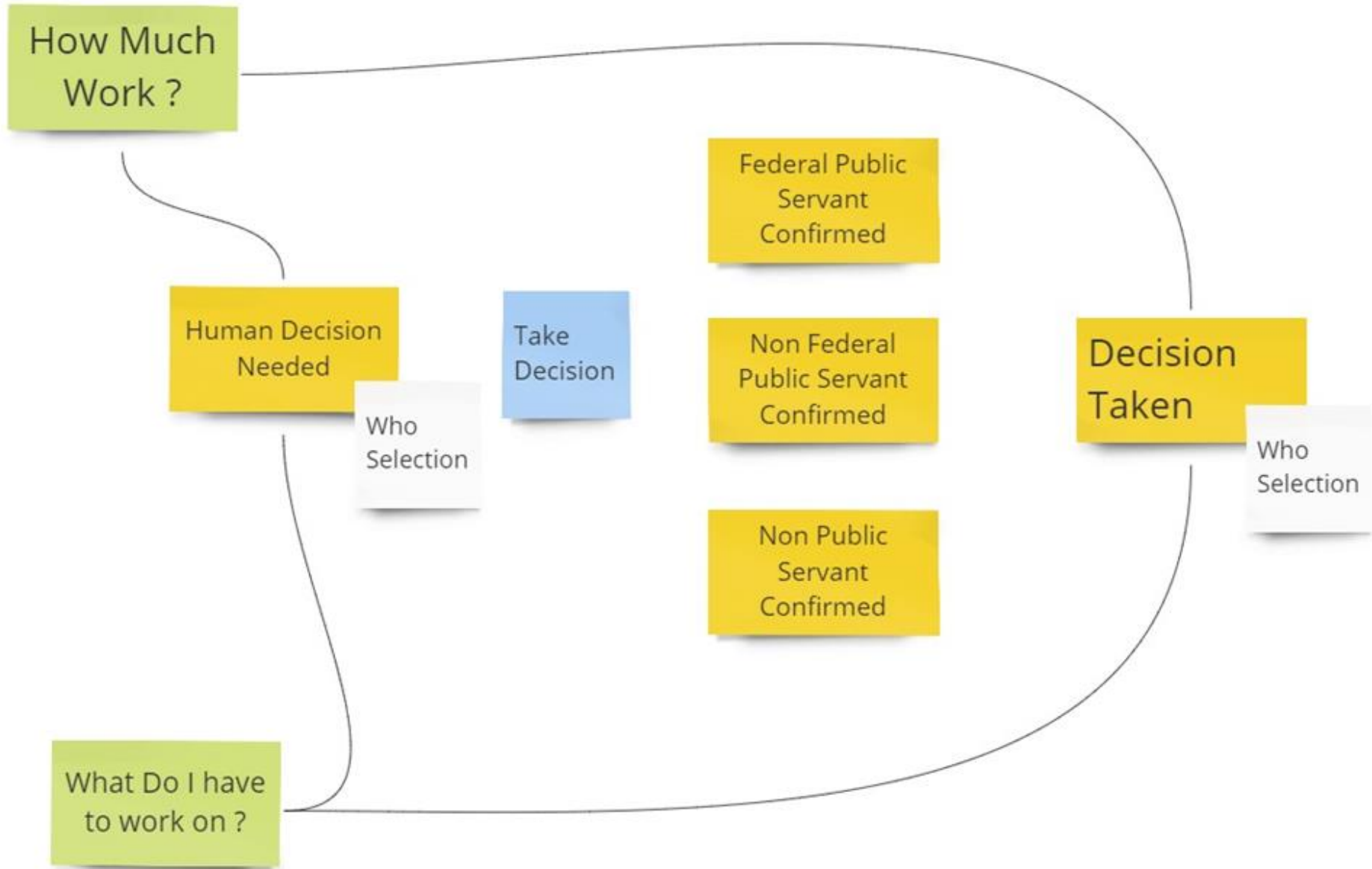


How Much  
Work ?

What Do I have  
to work on ?







How Much  
Work ?

Human Decision  
Needed

Who  
Selection

Take  
Decision

Federal Public  
Servant  
Confirmed

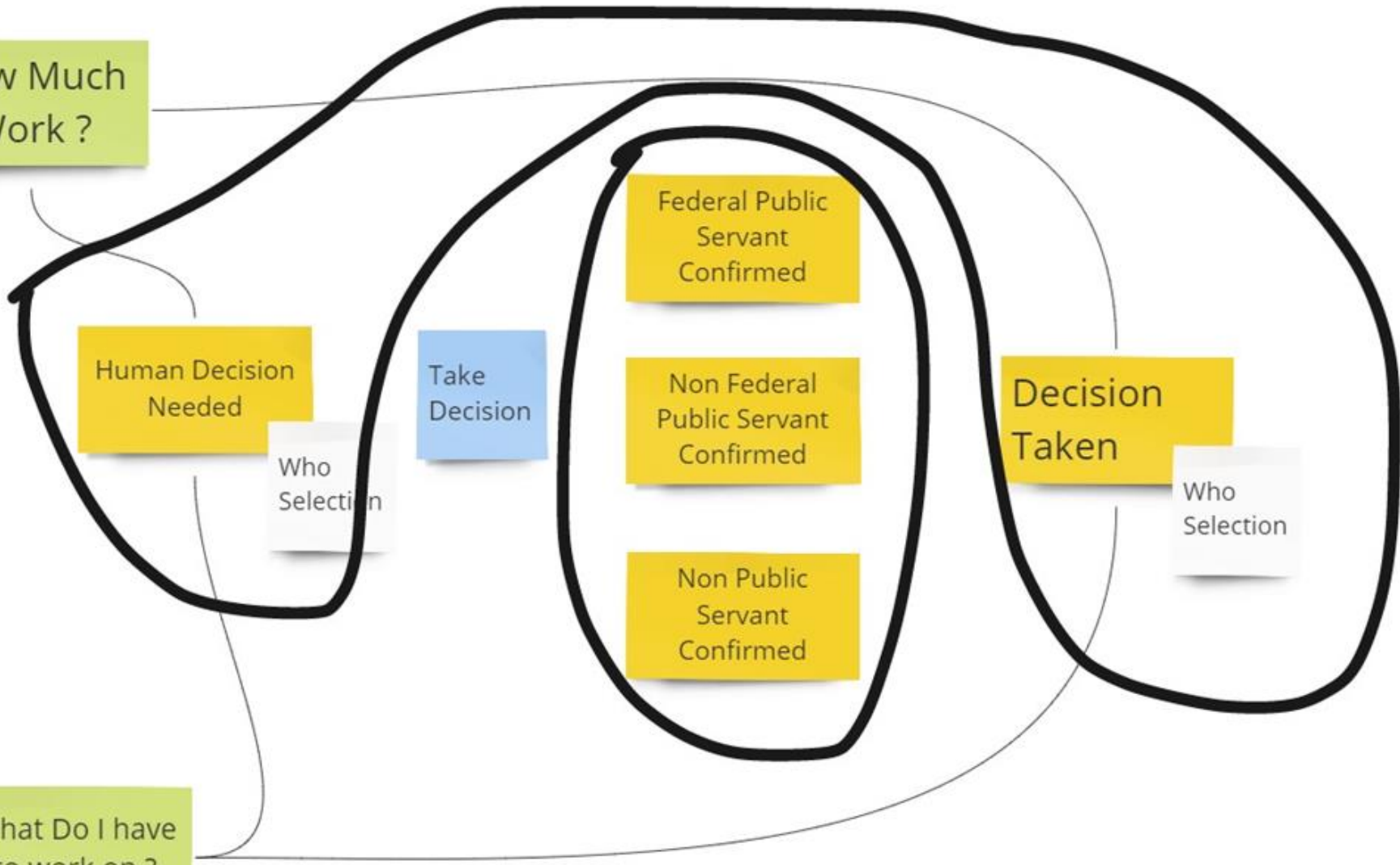
Non Federal  
Public Servant  
Confirmed

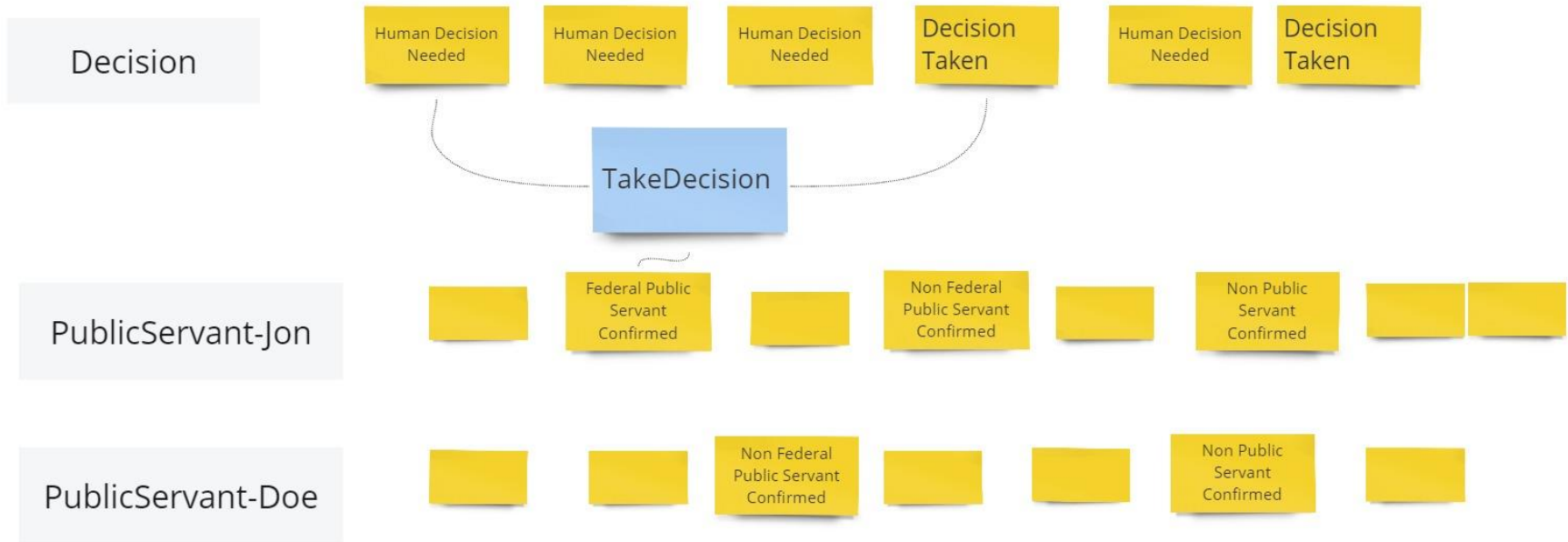
Non Public  
Servant  
Confirmed

Decision  
Taken

Who  
Selection

What Do I have  
to work on ?







“User Name must be unique”

User name

Login

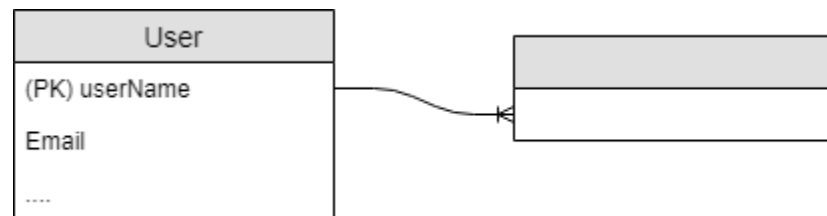
Choose a user name

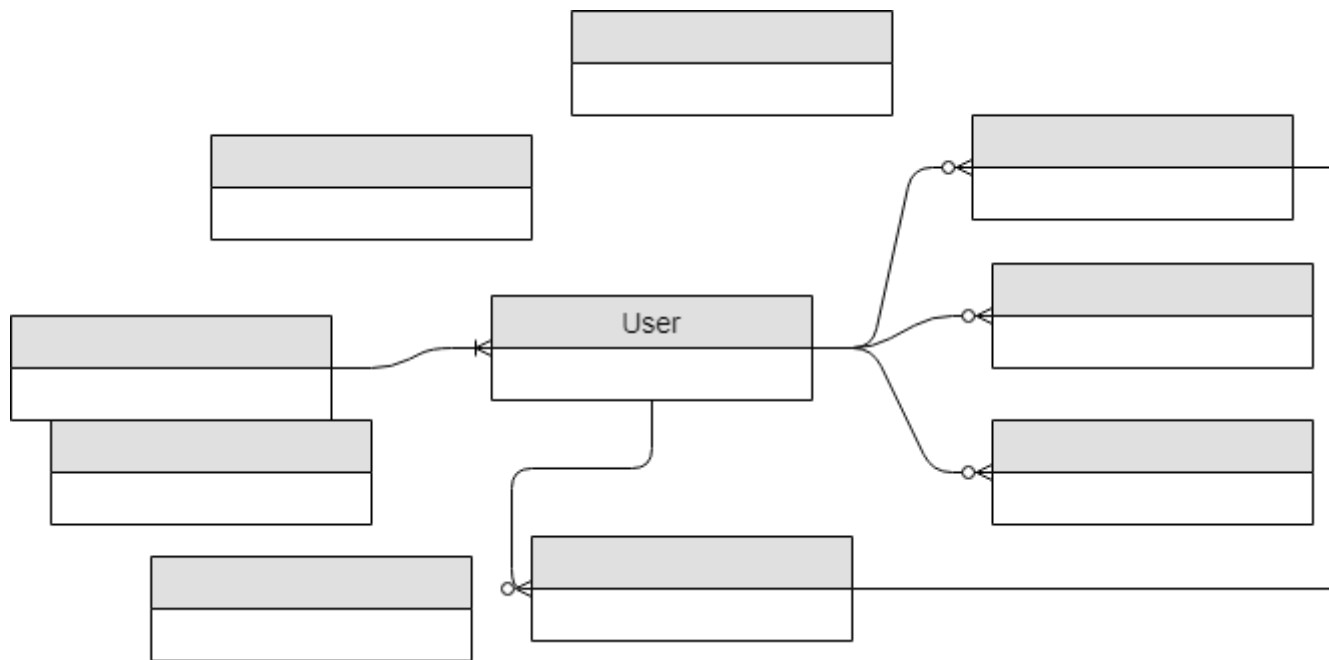
Register

This website uses 'cookies' to give you the best, most relevant experience. Using this website means you're Ok with this. You can change which cookies are set at any time - and find out more about them - by following this [link](#) (or by clicking the cookie link at the top of any page).

Login

Register







Register  
Jon

Jon  
Registered

Register  
Jon

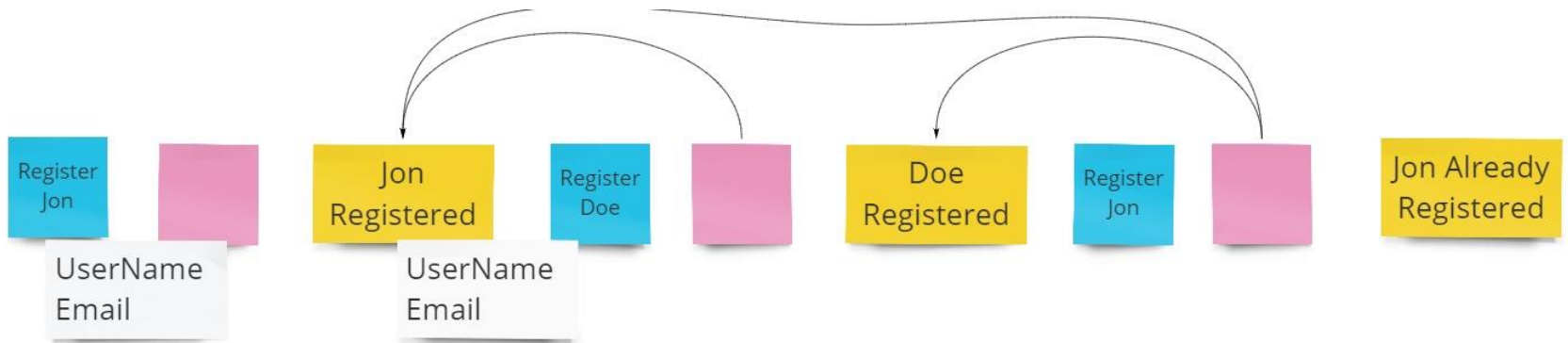
Jon  
Registered

Register  
Doe

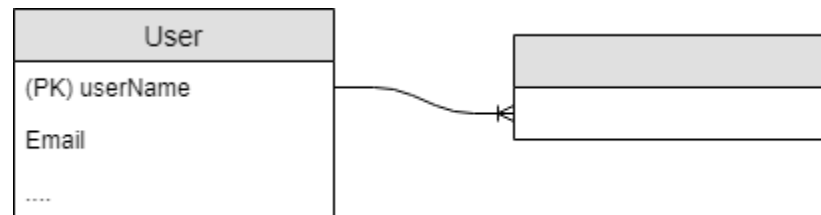
Doe  
Registered

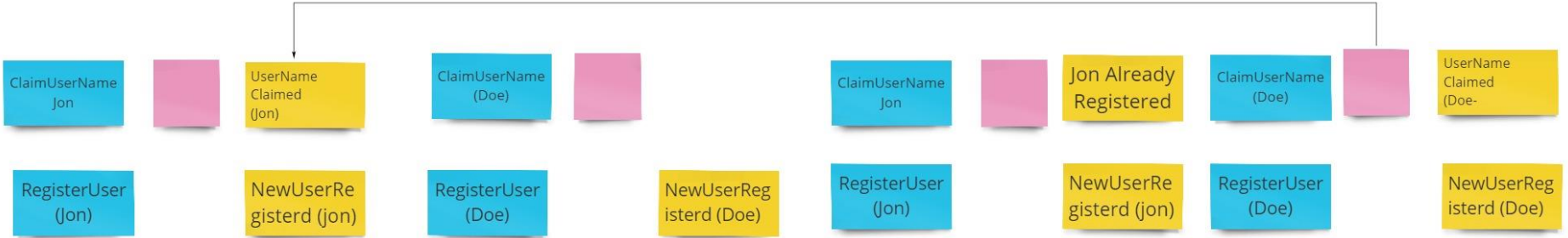


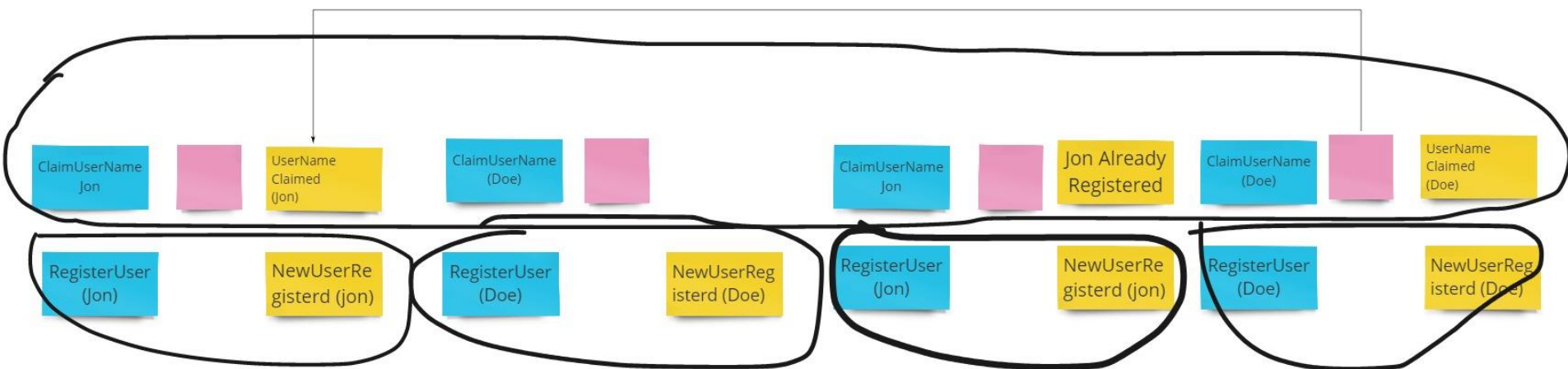




# We just modelled this







UserNameMustBeUnique

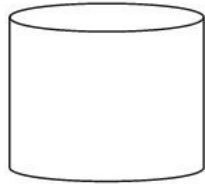
UserName  
Claimed  
(Jon)

UserName  
Claimed  
(Doe-

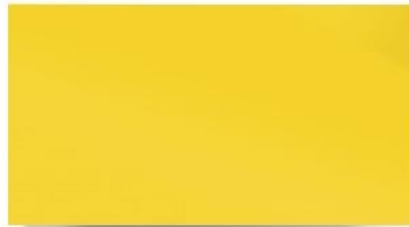
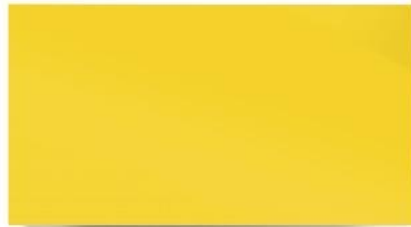
User-Jon

User-Doe

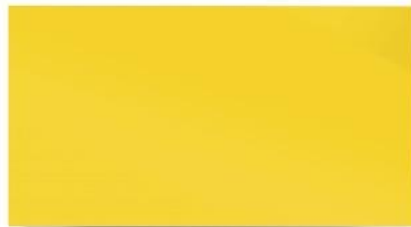
UserNameMustBeUnique



User-Jon



User-Doe



 Pinned Tweet



**ylorph** @ylorph · 12 Dec 2014

Ask for experience, not advice

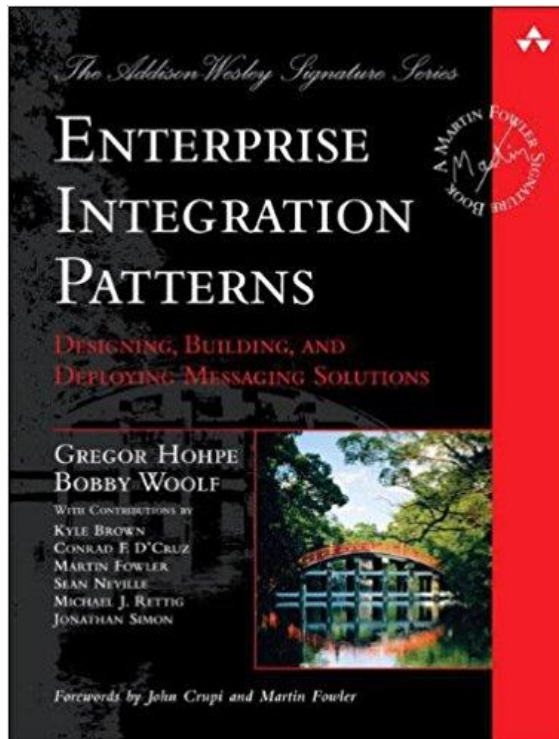
Latency is a fact

Eventual Consistency is a fact

In my experience:

Truly Different Models with a timeline





## Versioning in an Event Sourced System



GregYoung

Have you had troubles with versioning an Event Sourced system? Just getting into a new Event Sourced system for the first time? This book is the definitive guide of how to handle versioning over long periods of time.

100% of proceeds go to teaching children how to code via code club.  
<https://www.codeclub.org.uk/>

### Versioning in an Event Sourced System

Gregory Young

