



# InterSystems Cloud Services im Überblick

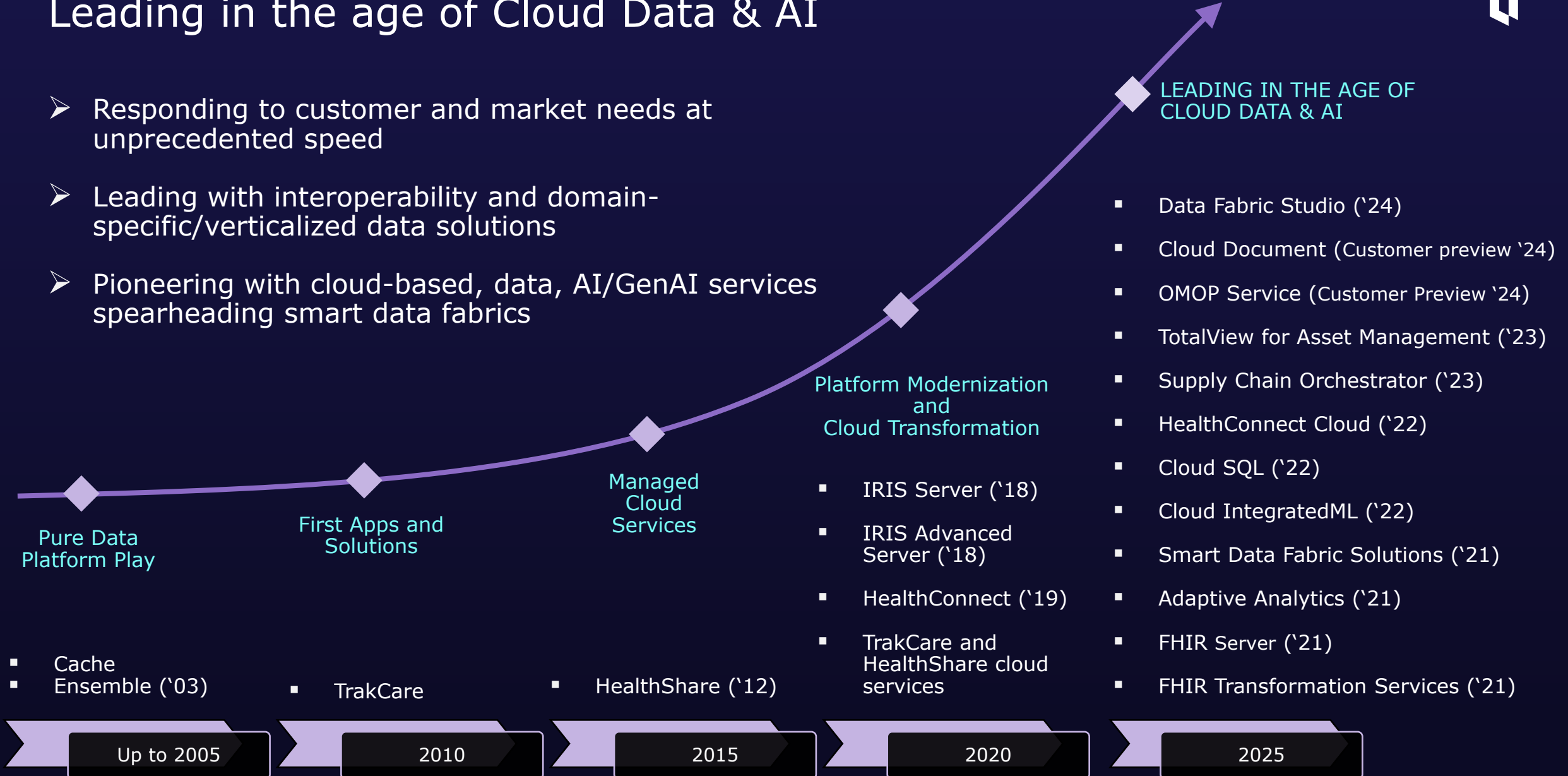
Stefan Wittmann  
Product Manager

# InterSystems Innovation Acceleration

## Leading in the age of Cloud Data & AI



- Responding to customer and market needs at unprecedented speed
- Leading with interoperability and domain-specific/verticalized data solutions
- Pioneering with cloud-based, data, AI/GenAI services spearheading smart data fabrics



# Delivery – InterSystems Cloud Services

Self-Managed



You pick the cloud and operate InterSystems software on it

Managed Instances



+ Logical infrastructure managed for you by InterSystems

Cloud Service



Completely managed, consume as “data microservices” by InterSystems



# Product Positioning Strategy



Smart  
Data Fabric



Exposed as  
Smart Data Services

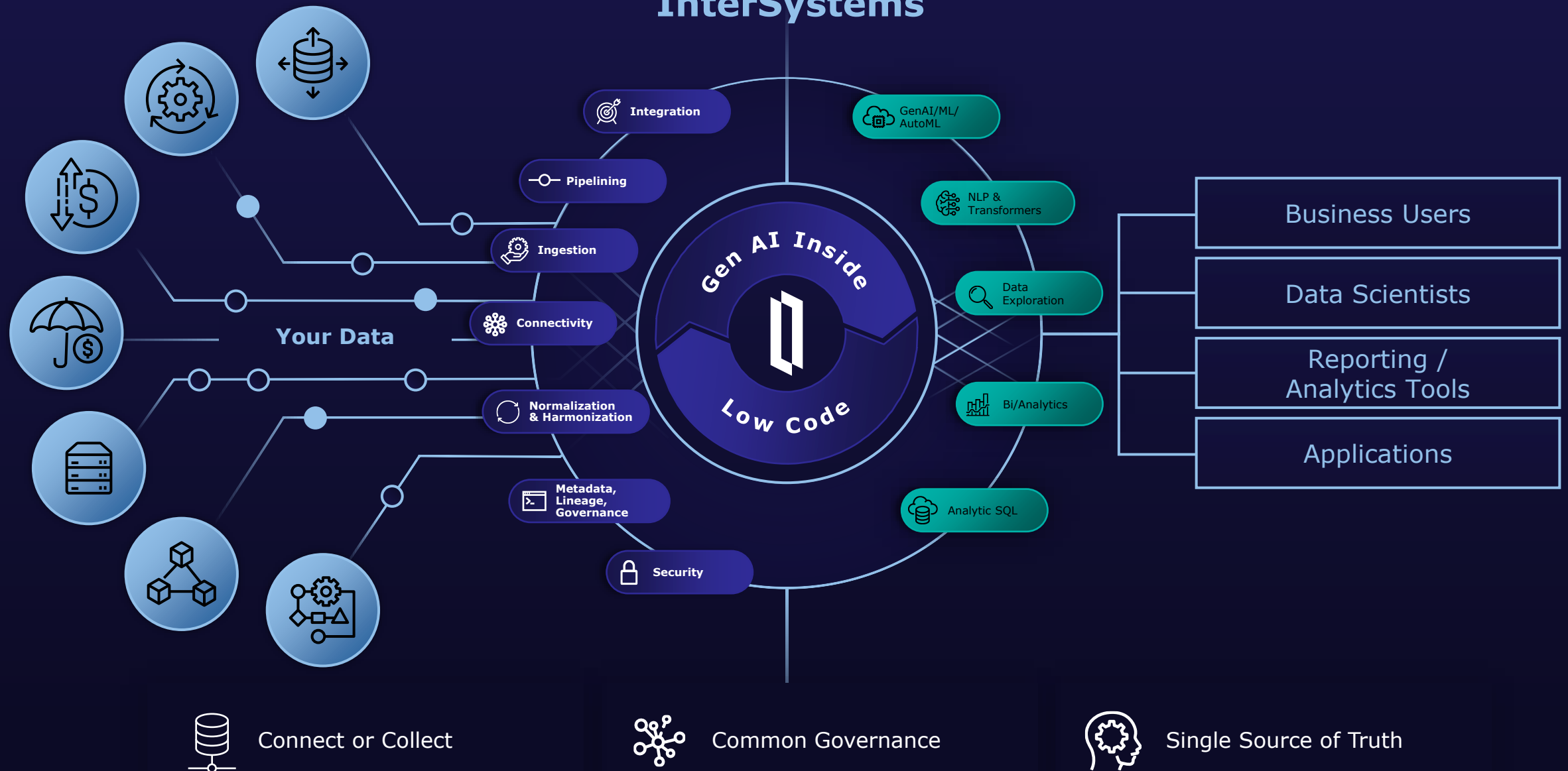


Vertical Applications and  
Frameworks

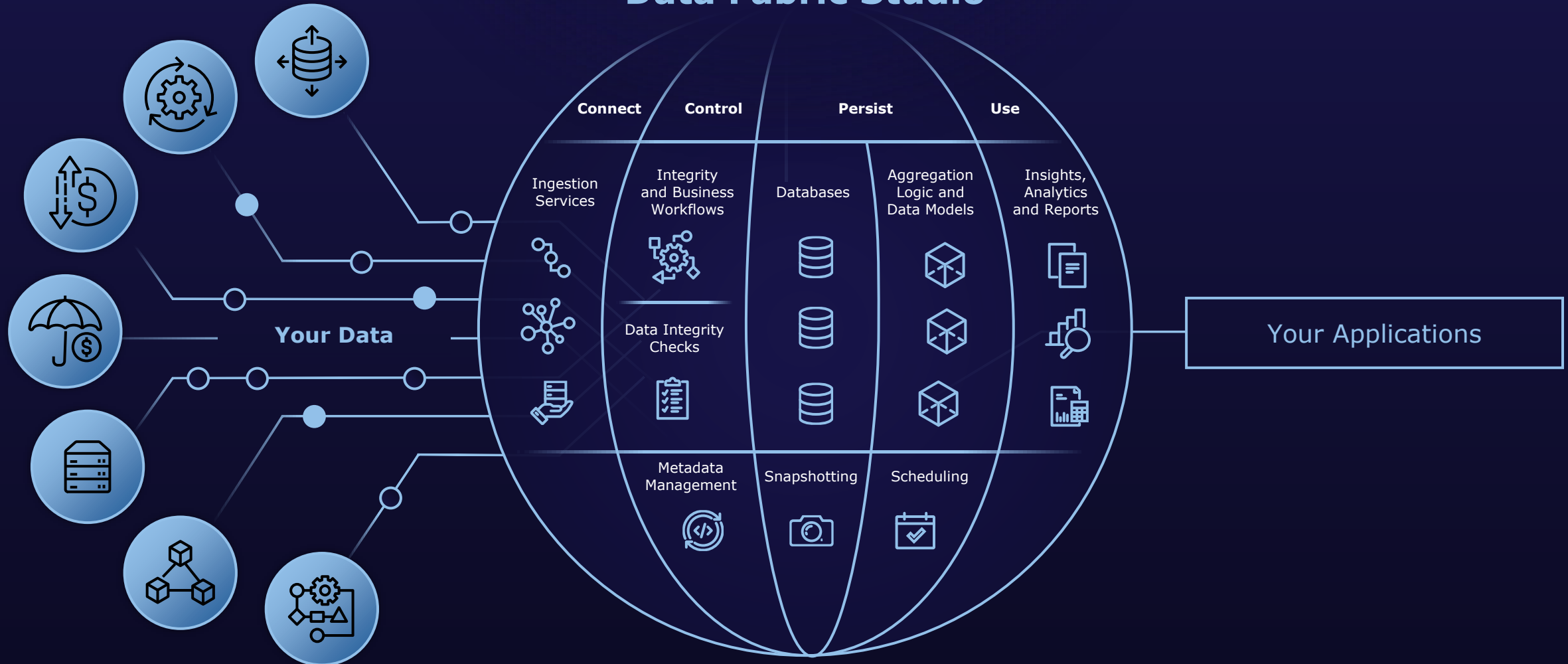




# Smart Data Fabric



## Data Fabric Studio



# Smart Data Fabric – Differentiators



## Embedded Analytics



“Close to the data”  
approach to analytics  
reduces risk of  
mismatch and lag

## Common Data Plane



Multimodel foundation  
minimizes data  
duplication and  
movement, resulting in  
lower TCO

## Smart Data Services



Single-ecosystem  
application composition  
framework accelerates  
solution design  
and development



# Our philosophy: Run close to the data



## Analytics close to the Data

InterSystems  
IRIS BI



Adaptive  
Analytics



InterSystems  
Reports



NLP & Hybrid  
Search



## AI & ML close to the Data



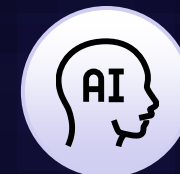
PMML  
Engine



Embedded  
Python

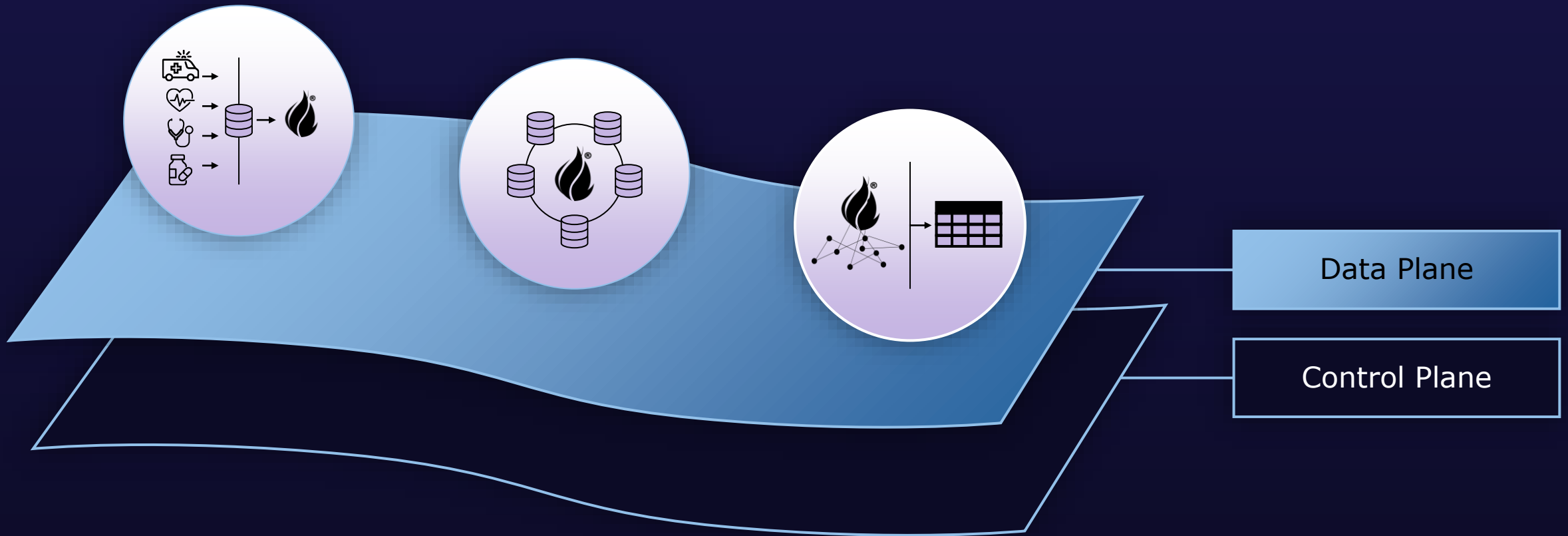


IntegratedML



GenAI &  
Vector Search

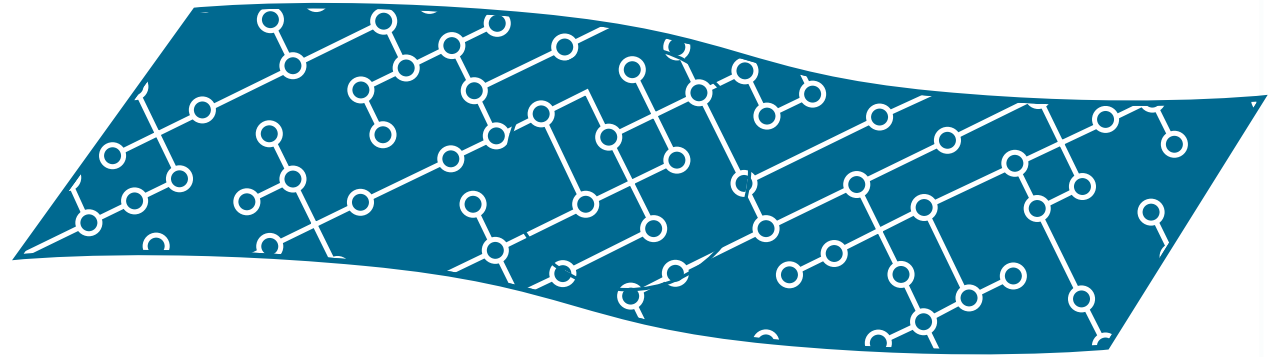
# Smart Data Fabric – Common Data Plane



# Secret Sauce: The Common Data Plane



The Common Data Plane persists values via highly optimized multi-dimensional arrays

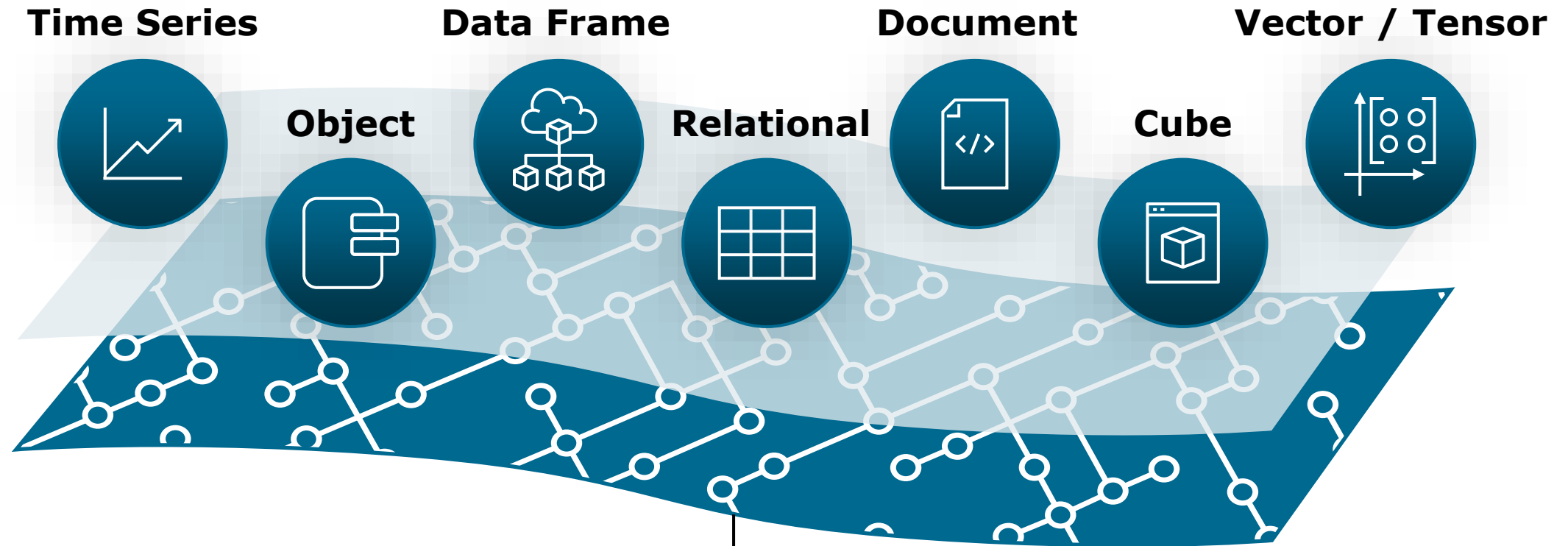


Multi-key array subscripts enables advanced index structures with **high-performance lookups & scans**



Flexible, highly optimized core data encodings enable the **multi-model architecture**

# Secret Sauce: The Common Data Plane



$\wedge_{\text{global}}( \langle \text{key1} \rangle, \langle \text{key2} \rangle, \dots ) = \$\text{encoding}( \langle \text{val1} \rangle, \langle \text{val2} \rangle, \dots )$

# Secret Sauce: Fast, Flexible Data Encodings

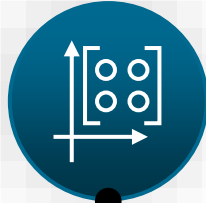


## Lists



```
$list("lcars",1138,88.0,...)
```

## Vectors



```
$vector(4.8,15.1,6.23,...)
```

## Documents



```
$pva({ "id":10816,  
       "fname":"roy",  
       ... })
```

## Bitmaps



```
$bit(1,0,1,0,1,0,...)
```

# Secret Sauce: Projections



Document

```
{
  "location": "ICU5",
  "collector_name": "Smartlinx5",
  "sensor_name": "BP3",
  "bed_id": 8605,
  "readings": [
    { "start_time": "2024-07-04 10:12:03.642",
      "interval": 3.333,
      "values": [7200, 7300, 7700, 8500, 9100] },
    ... ]
}
```



Relational

Location	Sensor	Date	Time	Value
ICU5	BP3	2024-07-04	10:12:03.642	7200
ICU5	BP3	2024-07-04	10:12:06.975	7300
ICU5	BP3	2024-07-04	10:12:10.308	7700
ICU5	BP3	2024-07-04	10:12:13.641	8500
ICU5	BP3	2024-07-04	10:12:16.974	9100
...	...	...	...	...

PUT

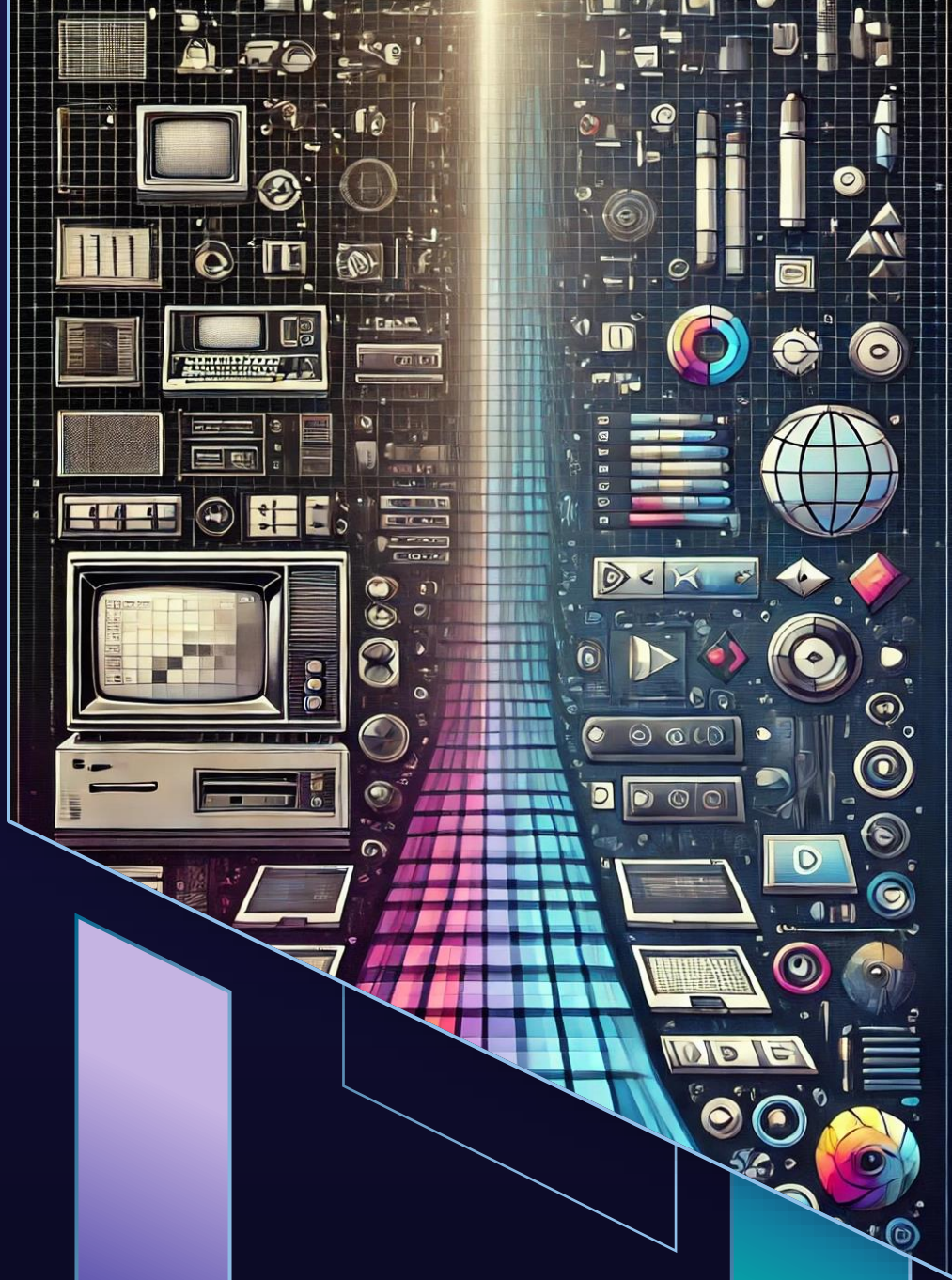
GET

SELECT

INSERT

```
^wave(202407, "ICU5", 123) = $list("Smartlinx5", "BP3", 8605)
^wave(202407, "ICU5", 123, 1, "ts") = $list("2024-07-04 10:12:03.642", 3.333)
^wave(202407, "ICU5", 123, 1, "v") = $vector(7200, 7300, 7700, 8500, 9100,
```





# Update user flows

Services are different than on-prem products

# Research results by numbers



- Research Findings
  - *Major themes for improvement...*
    - Navigation
    - Fluidity
    - Enabling users to shift fluidly through their workflow
- Users can't easily return to a main task after completing supporting tasks

## Results Dashboard

43

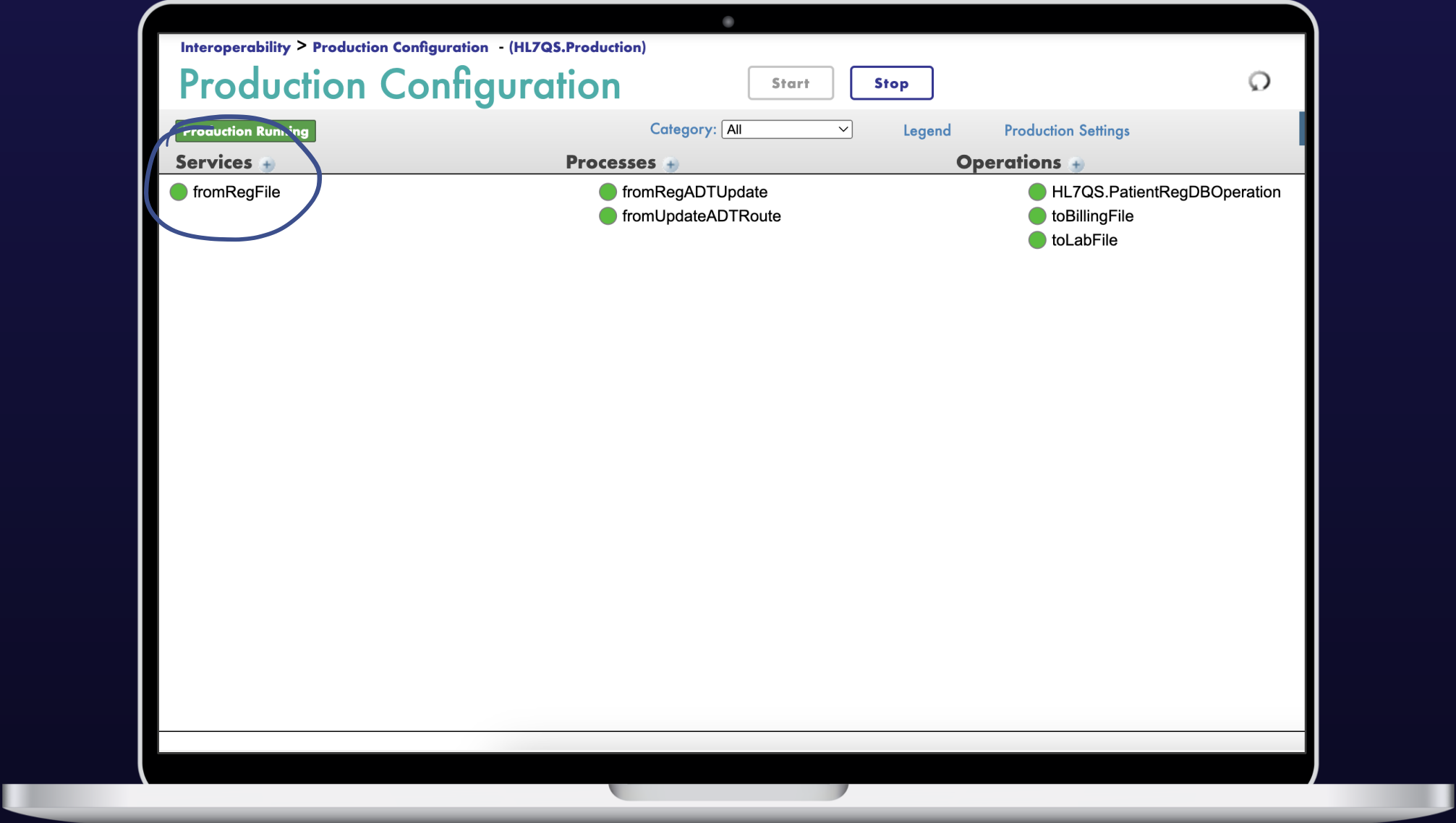
findings

70

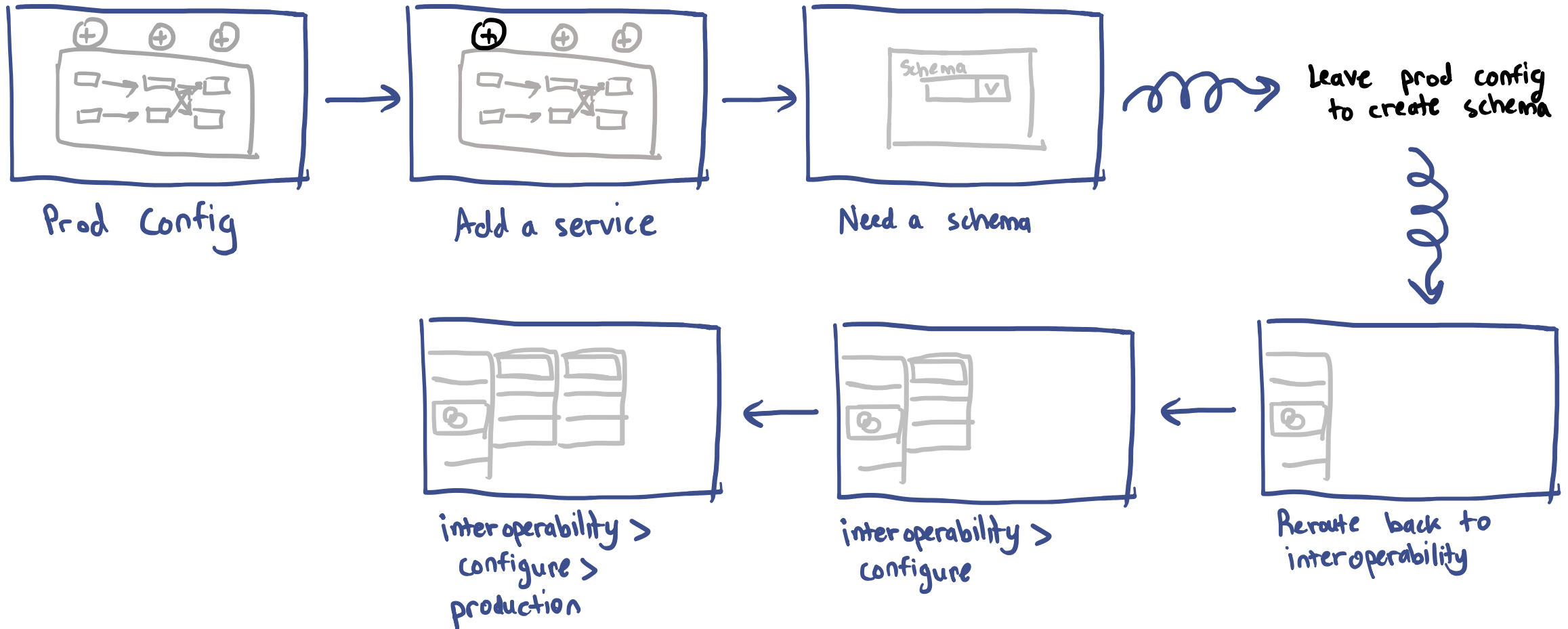
potential UX changes

*"I think that there is great potential for mutual benefit in interacting with UX Designers, so it is exciting to be able to connect up with you." - Customer*

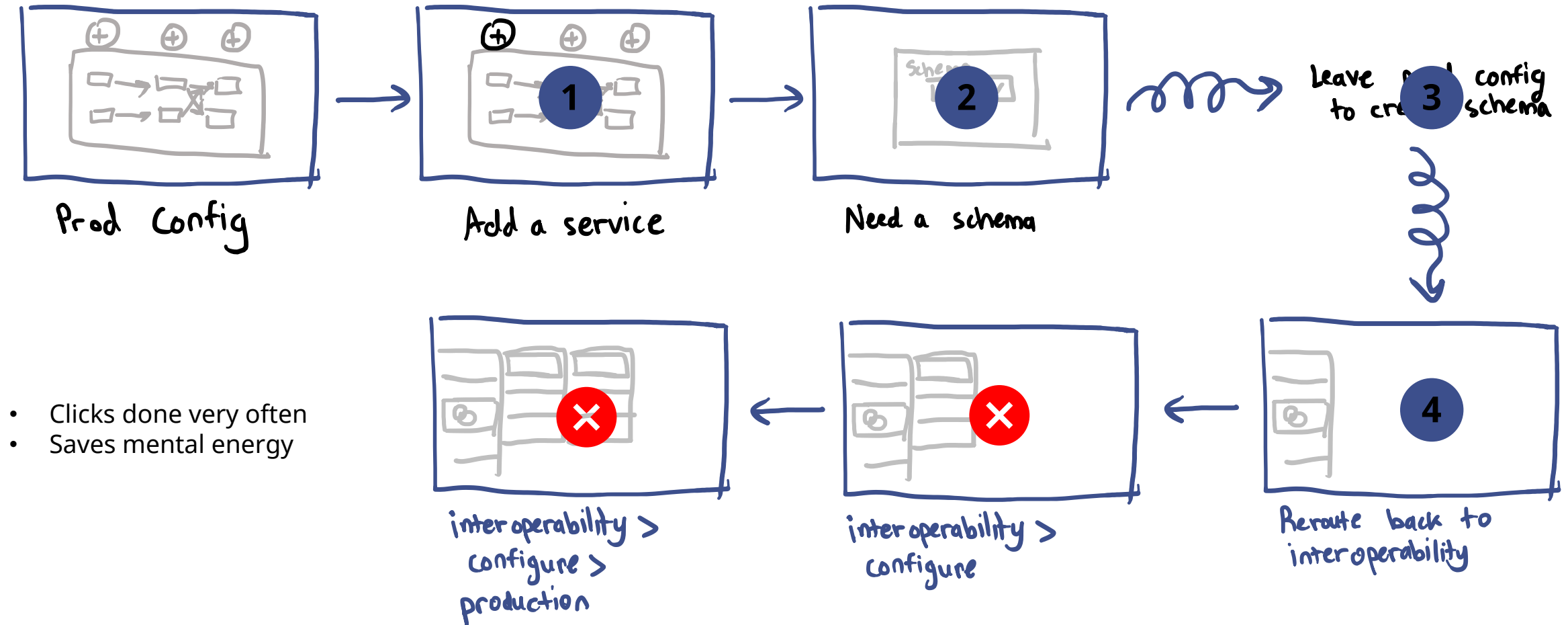
# ADDING A SERVICE



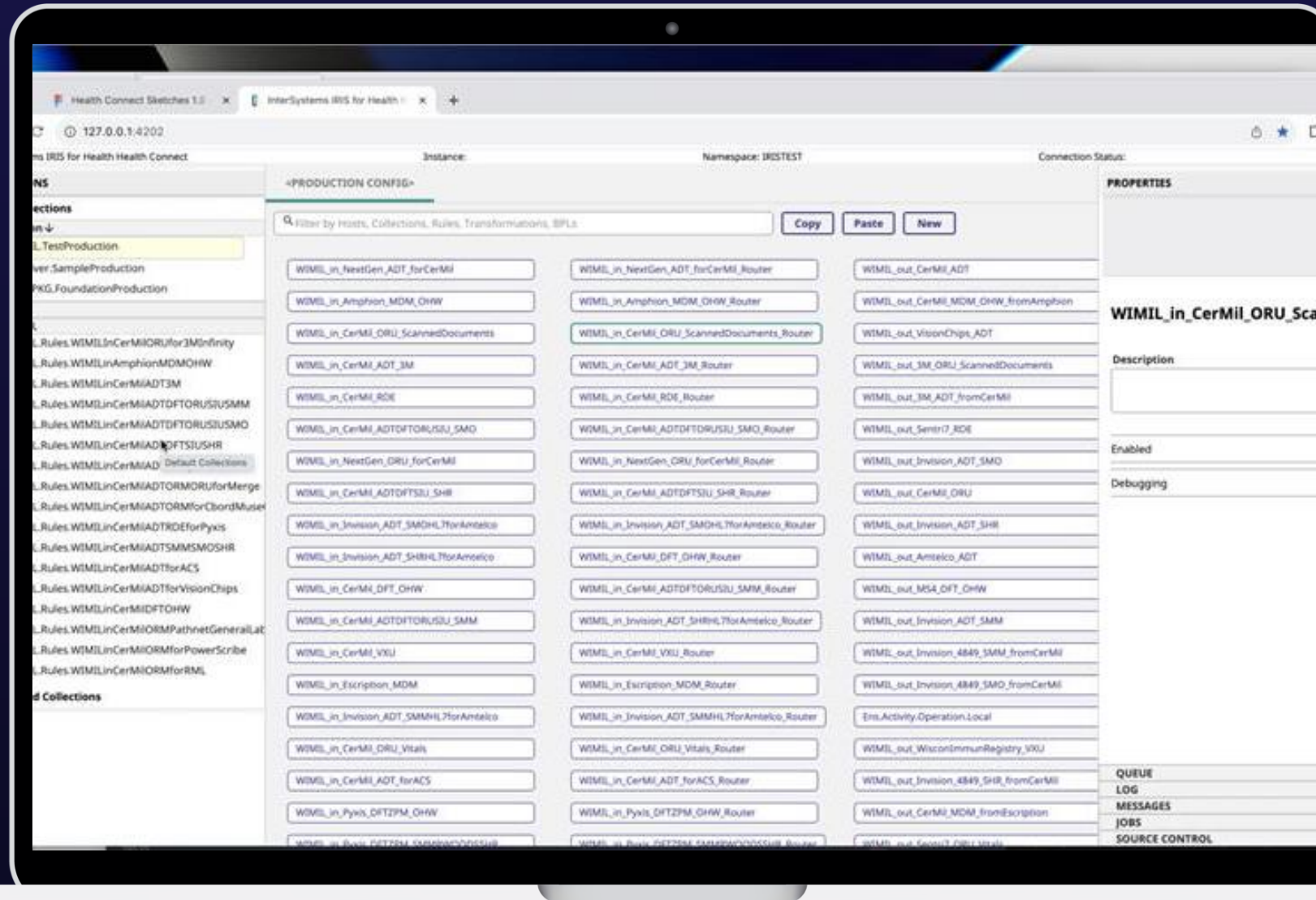
## ADDING A SERVICE



## ADDING A SERVICE



# Demo: HealthConnect Cloud New User Interface







# Data Onboarding

# Demo: InterSystems IRIS Cloud Document

