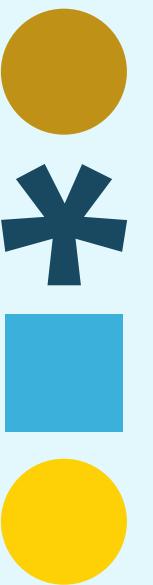




xShare Yellow Button





Christiaan Knaap
christiaan@fire.ly

xShare Yellow Button



Agenda



1. Firely
2. Setup
3. Demo
4. Considerations
5. Questions



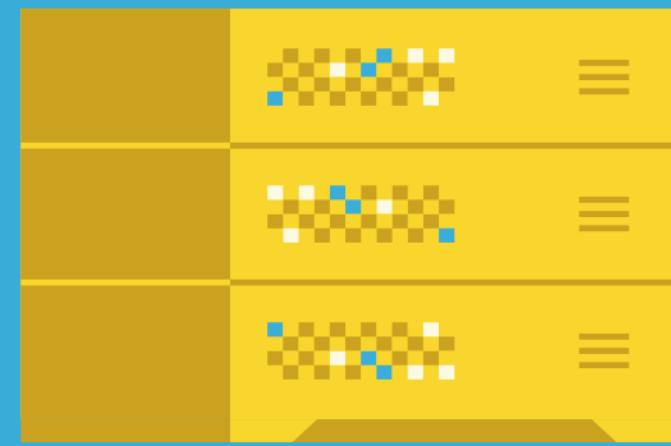
FHIR out of the box

By the people who co-created FHIR

Our FHIR toolkit

Firely Server

FHIR-native data platform



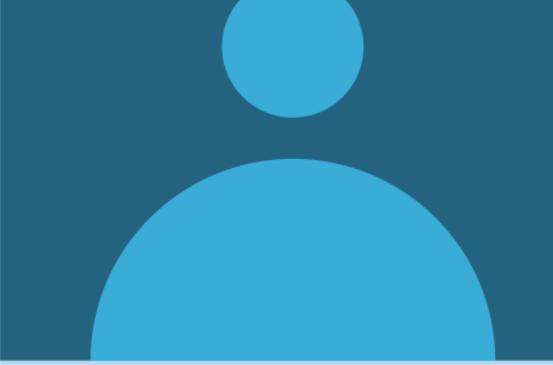
Simplifier.net

Web-based platform for FHIR data modeling

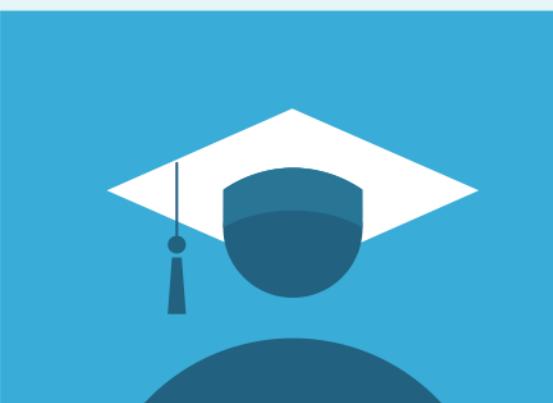


Firely dQM

Real-time digital quality measurement solution



Consulting Services



FHIR Training

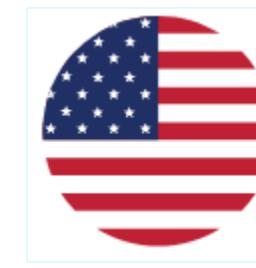
Firely Server -Certified Solution

21st Century Cures Act

Giving patients and their care givers secure access to electronic health information (EHI)

CMS Interoperability Rule

Improving health information exchange for patients, health care providers, and payers)



EHDS

Giving patients and their care givers secure access to electronic health information (EHI)



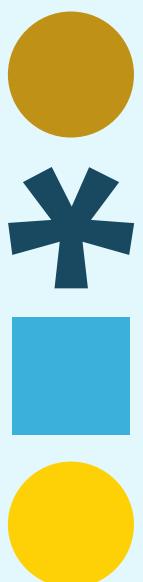
ISiK

Improving between hospital information systems



Mij and VIPP

exchange between care providers and patients, and between healthcare providers



FHIR RESTful API & search

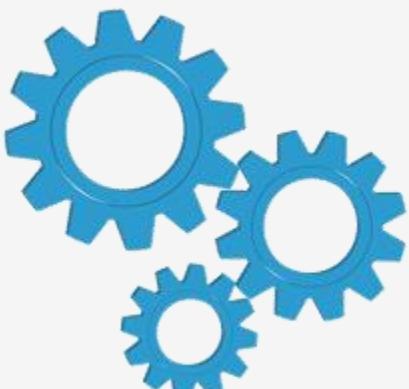
More than 85% of FHIR Rest API implemented

- (v)read, search, patch, history, etc.
- (conditional) create, update & delete
- batch, transaction
- _include, _revinclude, (reverse) chaining, etc.
- Custom search parameters

<https://server.fire.ly/>

Capability statement

```
{  
  "resourceType": "CapabilityStatement",  
  "id": "430fc89d-a11f-4ebf-8f68-5a4af8f96e9a",  
  "meta": {  
    "versionId": "271585bd-b95b-4729-8b75-d2fd5942e904",  
    "lastUpdated": "2022-04-12T21:02:20.7665596+00:00"  
  },  
  "language": "en-US",  
  "url": "http://server.fire.ly/fhir/CapabilityStatement/FirelyServer",  
  "version": "1.0",  
  "name": "Firely Server 4.8.1 CapabilityStatement",  
  "status": "active",  
  "experimental": true,  
  "date": "2022-04-12T21:02:20.7665725+00:00",  
  "publisher": "Firely",  
  "contact": [  
    {  
      "name": "Firely",  
      "telecom": [  
        {  
          "system": "email",  
          "value": "server@fire.ly",  
          "use": "work"  
        }  
      ]  
    },  
    {  
      "name": "Licensed to",  
      "telecom": [  
        {  
          "system": "email",  
          "value": "info@fire.ly",  
          "use": "work"  
        }  
      ]  
    }  
  ]  
}
```



Security/SMART on FHIR

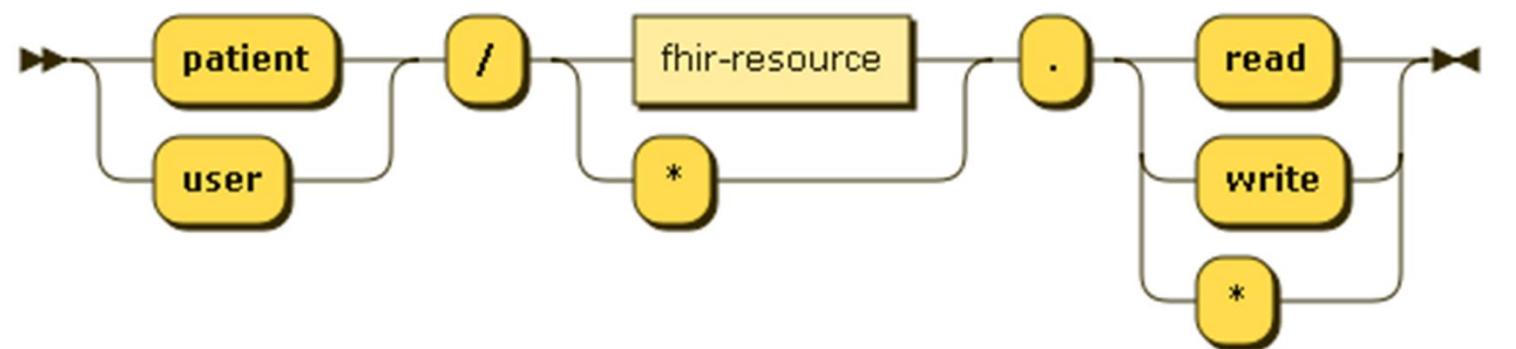
Support for SMART on FHIR v1 and v2

Works with any SMART on FHIR (OAuth 2.0) compatible auth server
Including Firely Auth

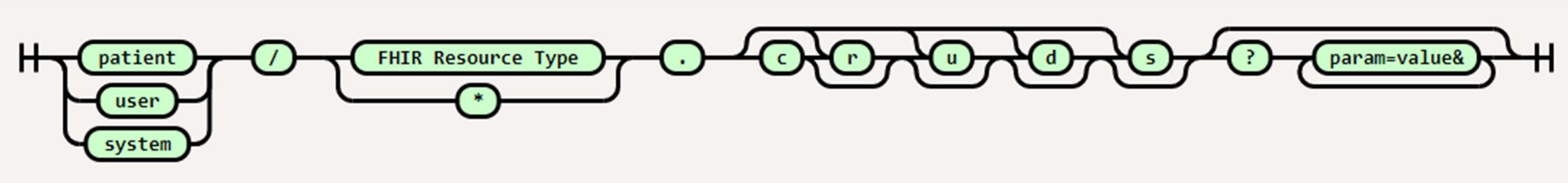


SoF v1

```
clinical-scope ::= ( 'patient' | 'user' ) '/' ( fhir-resource | '*' ) '.' ( 'read' | 'write' | '*' )
```



SoF v2



Firely xShare Yellow Button

firely

Features: Auditing

Registration of audit events:

- Log entries
- AuditEvent resources

Contents of audit event highly configurable

AuditEvent resources cannot be tampered with

HIPAA compliant

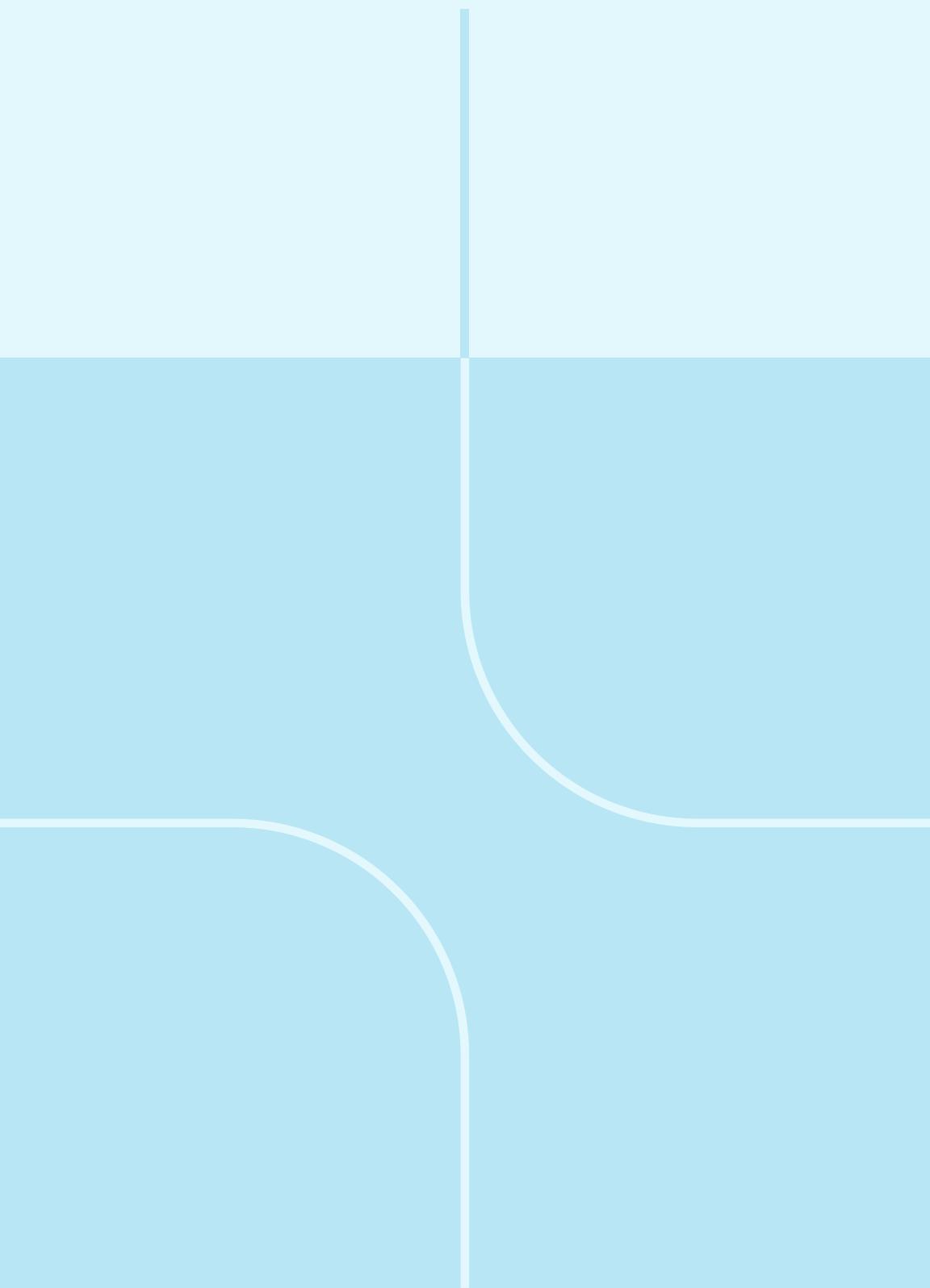
ATNA compliant

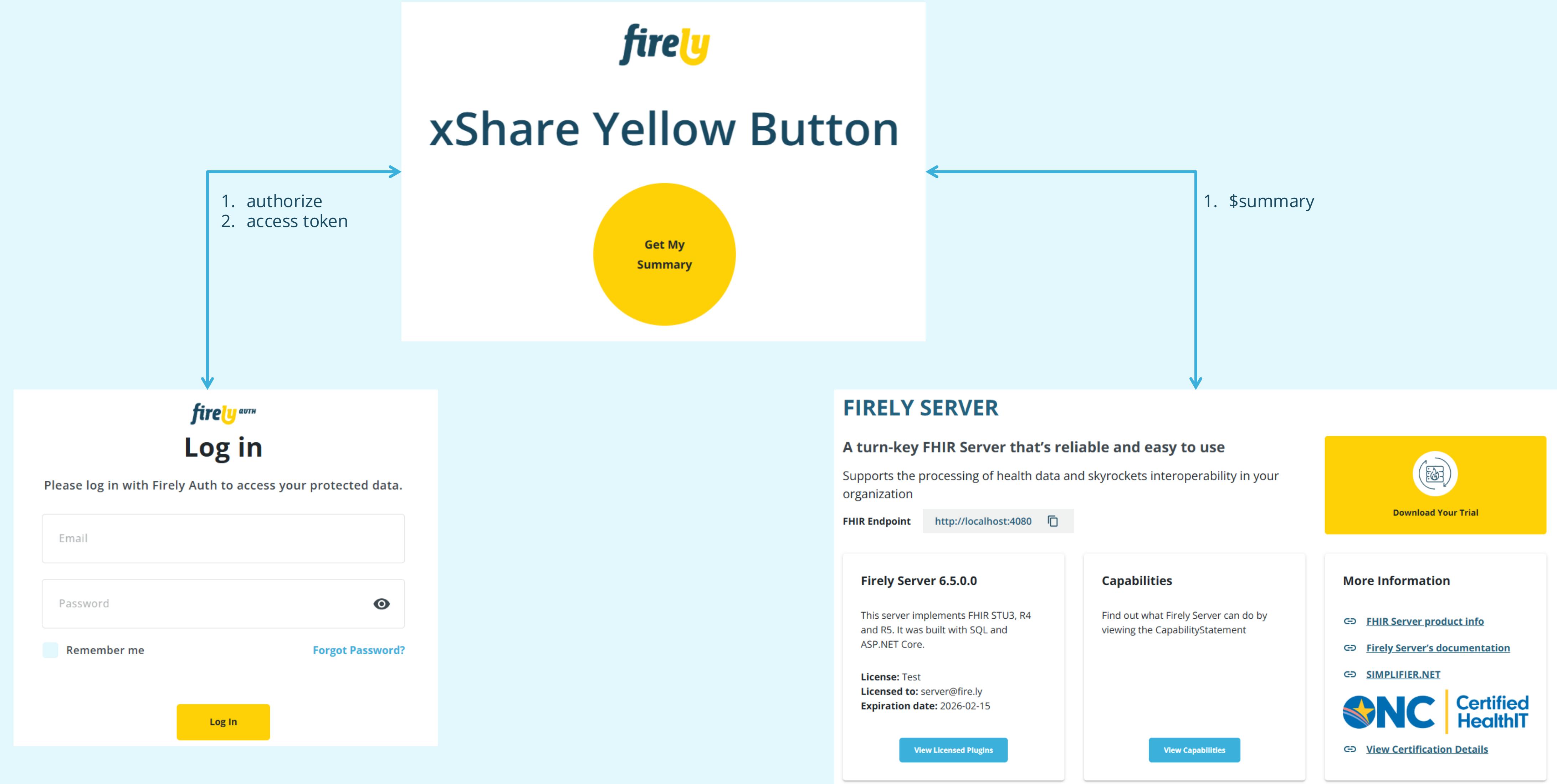


firely

Setup

xShare Yellow Button





Demo setup

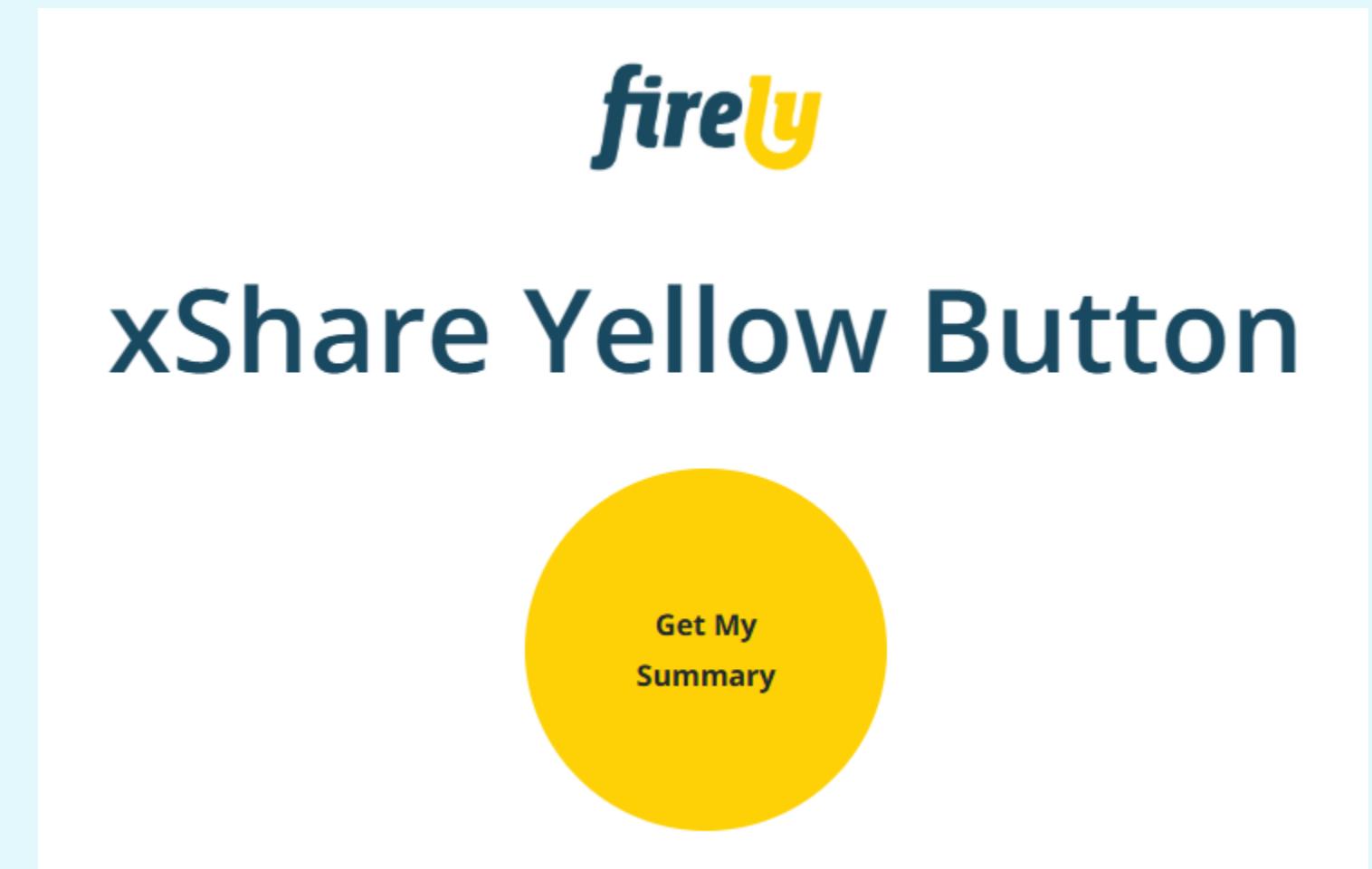
xShare Yellow Button

firely

Request Summary

Yellow Button app

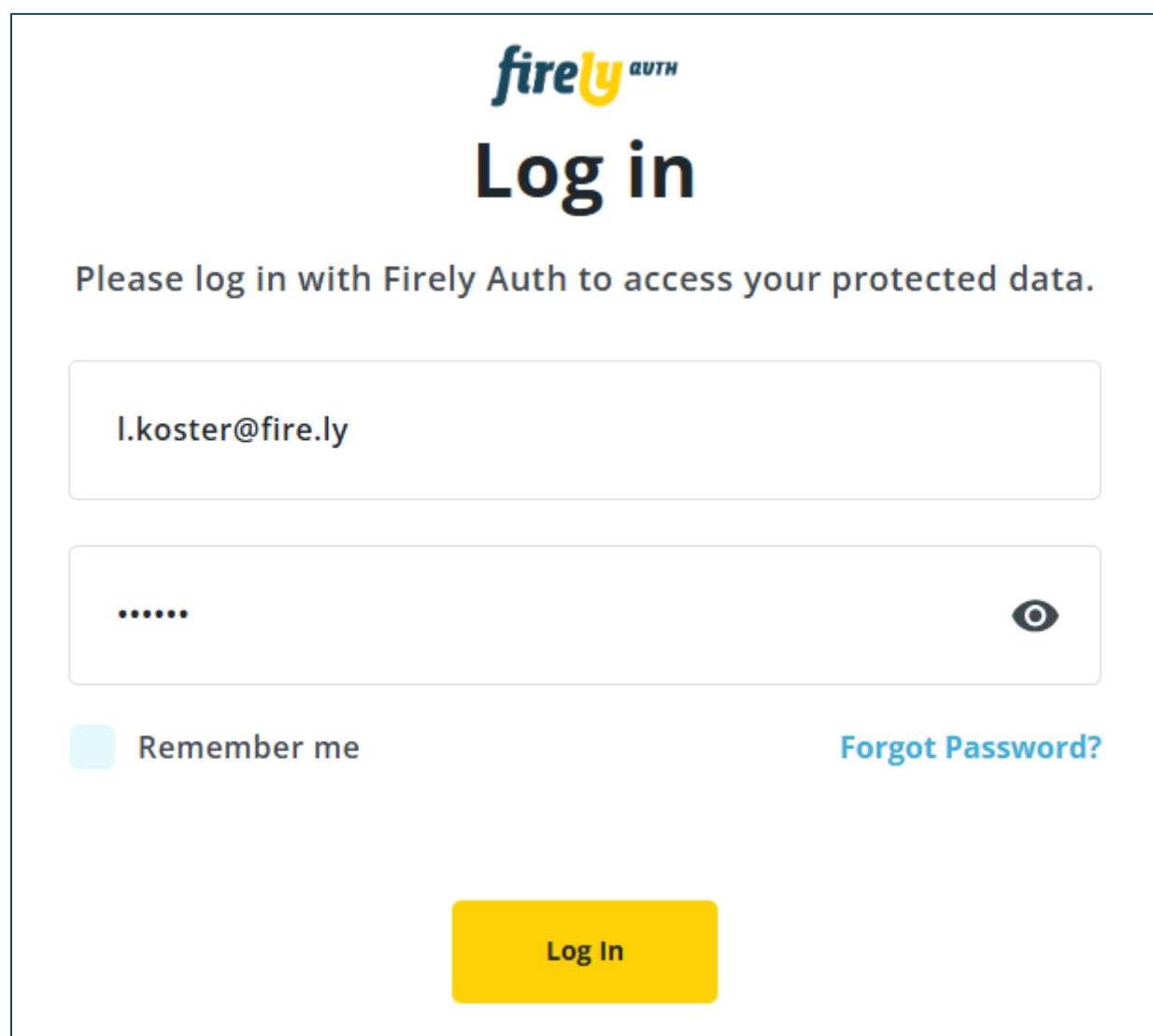
- Start the app
- Click the button



Patient log in

Firely Auth

Log in as patient



firely AUTH

Log in

Please log in with Firely Auth to access your protected data.

eye icon

Remember me [Forgot Password?](#)

Log In

Users 3

Search... Search icon Filter icon Add icon

Full Name ↑	Email	User Type	Type
Christiaan Knaap	christiaan@fire.ly	Practitioner	Local
Gastone Farnese	g.farnese@fire.ly	Patient	Local
Louise Köster	l.koster@fire.ly	Patient	Local

10 1 >

Clients 1

Search... Search icon Filter icon Add icon

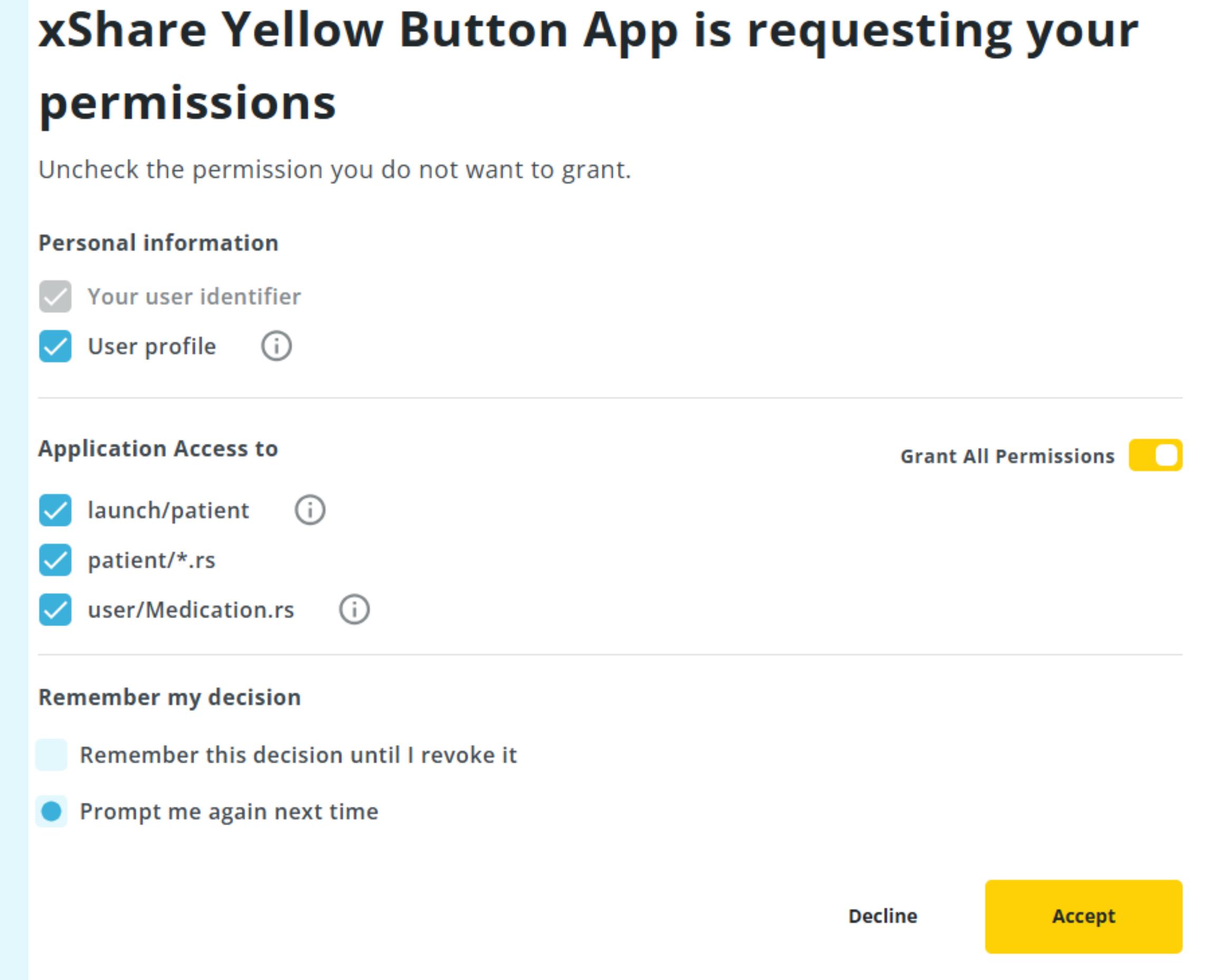
Client Id ↑	Description	Enabled	Client Type	Tags #
yellow-button	xShare Yellow Button	Enabled	Standalone App / EHR Launch App	

10 1 >

Grant permission

Firely Auth

- as a Patient, read and search every resource within my record
- as a User, read and search Medication resources
- SMART on FHIR v2 syntax



Generate summary

Firely Server

- construct Composition
- fetch related resources
- generate narratives
- bundle it up
- enforce authorization layers

Browse data

Yellow Button app

Köster,																																	
Patient ID:	e8c3437b-68ee-4397-a09e-489c548f2f9f																																
Date of Birth:	July 1, 1957																																
Gender:	female																																
Home Address:	Regina-Butte-Ring 737, Saulgau, 88348, Germany																																
Phone Number:	+49(0)2075293938																																
Email Address:	No value																																
ALLERGY INTOLERANCES CONDITIONS MEDICATION STATEMENTS MEDICATION REQUESTS																																	
MedicationStatements																																	
<table><thead><tr><th>Medication</th><th>Status</th><th>Intent</th><th>ID</th></tr></thead><tbody><tr><td>Metoprolol tartrate (as metoprolol succinate) 100 mg prolonged-release oral tablet</td><td>1 tablet (100 mg) once daily</td><td>-</td><td>c0532bfc-7265-462b-b7d7-94b9d84b22fa</td></tr><tr><td>Nitroglycerin 400 microgram/actuation sublingual spray</td><td>400 micrograms per spray, use one spray under the tongue as needed for chest pain, repeat every 5 minutes if needed, up to 3 sprays in 15 minutes</td><td>-</td><td>17f7d176-37c2-42d9-8d1a-f05a5aee2063</td></tr><tr><td>Simvastatin 20 mg oral tablet</td><td>1 tablet (20 mg) by mouth once daily</td><td>-</td><td>6b448aba-e32b-460f-8490-7967cfef8c26</td></tr><tr><td>Clopidogrel (as clopidogrel bisulfate) 75 mg oral tablet</td><td>1 tablet (75 mg) once daily</td><td>-</td><td>f14f0481-b214-4d51-b2b2-eaa9003fcccb</td></tr><tr><td>Lisinopril 10 mg oral tablet</td><td>1 tablet (10 mg) by mouth once daily</td><td>-</td><td>11a49f6e-6347-4498-adea-8cf995d158d</td></tr><tr><td>Hydrochlorothiazide 25 mg oral tablet</td><td>1 tablet (25 mg) by mouth once daily</td><td>-</td><td>edb2d11b-f931-46fe-ad9e-5742843db96e</td></tr><tr><td>Amlodipine (as amlodipine besylate) 2.5 mg oral tablet</td><td>1 tablet (2.5 mg) by mouth once daily</td><td>-</td><td>e555856f-ba68-4f4f-b429-836741228c72</td></tr></tbody></table>		Medication	Status	Intent	ID	Metoprolol tartrate (as metoprolol succinate) 100 mg prolonged-release oral tablet	1 tablet (100 mg) once daily	-	c0532bfc-7265-462b-b7d7-94b9d84b22fa	Nitroglycerin 400 microgram/actuation sublingual spray	400 micrograms per spray, use one spray under the tongue as needed for chest pain, repeat every 5 minutes if needed, up to 3 sprays in 15 minutes	-	17f7d176-37c2-42d9-8d1a-f05a5aee2063	Simvastatin 20 mg oral tablet	1 tablet (20 mg) by mouth once daily	-	6b448aba-e32b-460f-8490-7967cfef8c26	Clopidogrel (as clopidogrel bisulfate) 75 mg oral tablet	1 tablet (75 mg) once daily	-	f14f0481-b214-4d51-b2b2-eaa9003fcccb	Lisinopril 10 mg oral tablet	1 tablet (10 mg) by mouth once daily	-	11a49f6e-6347-4498-adea-8cf995d158d	Hydrochlorothiazide 25 mg oral tablet	1 tablet (25 mg) by mouth once daily	-	edb2d11b-f931-46fe-ad9e-5742843db96e	Amlodipine (as amlodipine besylate) 2.5 mg oral tablet	1 tablet (2.5 mg) by mouth once daily	-	e555856f-ba68-4f4f-b429-836741228c72
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Check Audit

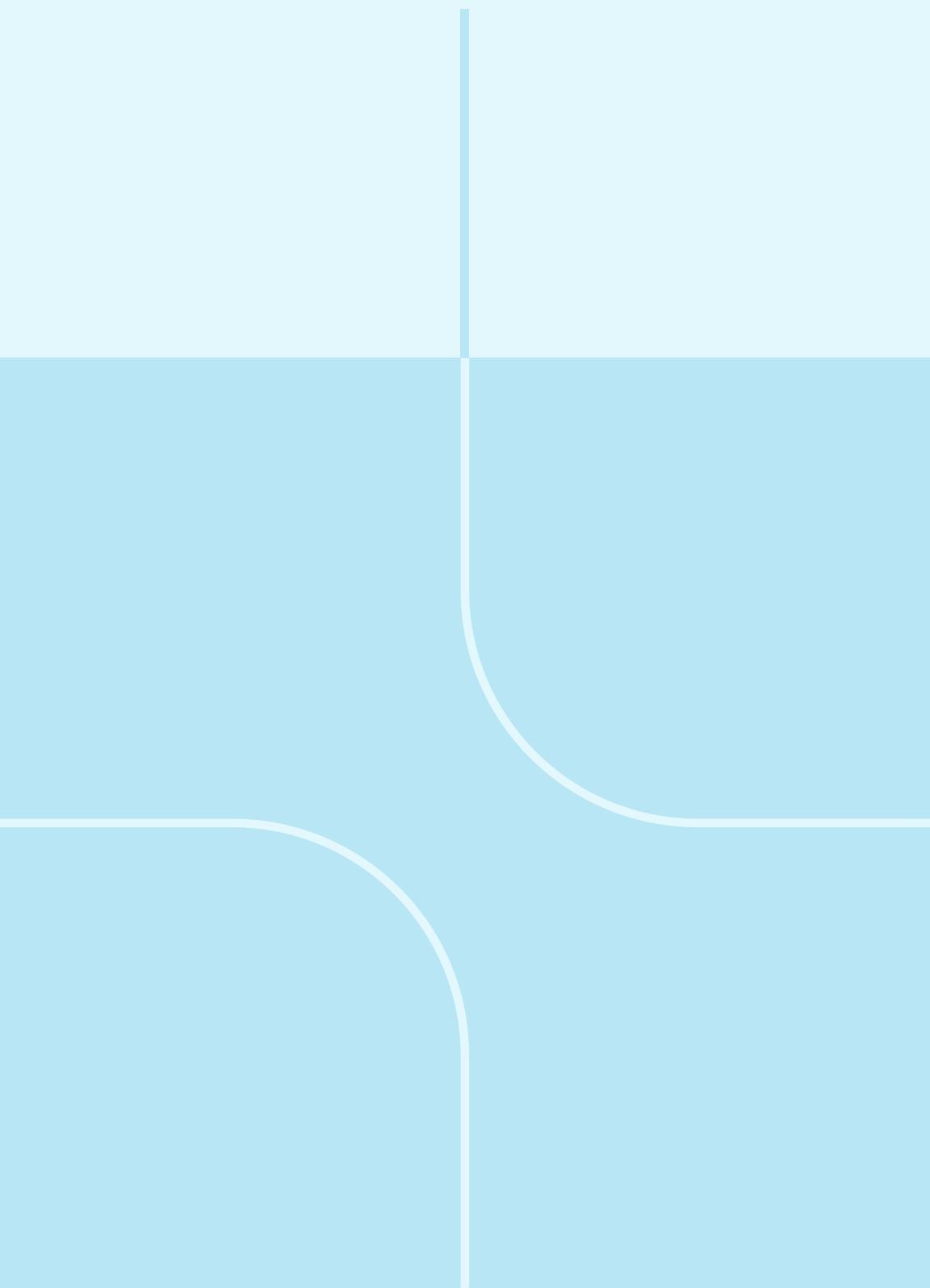
```
{  
  "resourceType": "AuditEvent",  
  "id": "43fcb63e-dfbc-4223-a551-ff01d415abc6",  
  "meta": {  
    "versionId": "a9104d58-13e4-460e-a6da-5cb09fb1ba5",  
    "lastUpdated": "2025-11-30T11:24:23.579+00:00",  
    "profile": [  
      "http://hl7.org/fhir/StructureDefinition/AuditEvent",  
      "https://profiles.ihe.net/ITI/BALP/StructureDefinition/IHE.BasicAudit.PatientQuery"  
    ]  
  },  
  "extension": [  
    {  
      "url": "http://hl7.org/fhir/5.0/StructureDefinition/extension-AuditEvent.category",  
      "valueCodeableConcept": {  
        "text": "Executed custom operation $summary"  
      }  
    }  
  ],  
  "type": {  
    "system": "http://terminology.hl7.org/CodeSystem/audit-event-type",  
    "code": "rest",  
    "display": "RESTful Operation"  
  },  
  "subtype": [  
    {  
      "system": "http://hl7.org/fhir/http-verb",  
      "code": "GET",  
      "display": "GET"  
    },  
    {  
      "system": "http://hl7.org/fhir/restful-interaction",  
      "code": "operation",  
      "display": "operation"  
    }  
  ],  
  "action": "E",  
  "recorded": "2025-11-30T11:24:23.579+00:00",  
  "outcome": "0",  
  "outcomeDesc": "200",  
  "agent": [  
    {  
      "type": "coding",  
      "coding": [  
        {  
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          "code": "UserOAuthAgent",  
          "display": "User OAuth Agent participant"  
        }  
      ]  
    },  
    {  
      "who": {  
        "reference": "http://localhost:4080/R4/Patient/e8c3437b-68ee-4397-a09e-489c548f2f9f",  
        "display": "l.koster@fire.ly"  
      },  
      "requestor": true  
    }  
  ],  
  "type": "coding",  
  "coding": [  
    {  
      "system": "http://dicom.nema.org/resources/ontology/DCM",  
      "code": "110150"  
    }  
  ]  
}  
  xShare Yellow Button  
  {  
    "who": {  
      "identifier": {  
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      }  
    },  
    "requestor": false  
  },  
}
```

Firely Server / Postman

firely

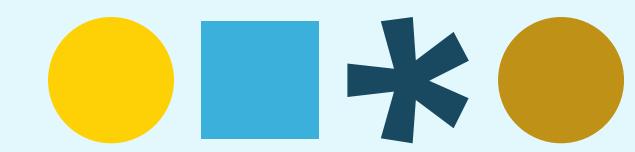
Considerations

xShare Yellow Button



The Format

Will it be FHIR?



Controlling the contents

Who and how?

IPS, with \$summary, lets the server create the composition

\$document lets the user supply a composition

\$everything includes everything within the users' authorization

Authorization

SMART on FHIR

- Client authorization:
 - Well-established standard with SMART on FHIR v2
 - Very detailed attribute-based access control
 - Launch context
- Firely Server adds:
 - AccessPolicy (user authorization)
 - Tenant
 - Operation access

xShare Yellow Button seems easy on a FHIR Server, but it needs many components working together

Want to see the European Patient Summary brought to life?



Martijn Verhoeven

Join tomorrow's webinar — From FHIR Data to Insight: Dashboards in Minutes

See how the European Patient Summary can be visualized and used directly inside existing EHR workflows *in minutes*.



Gasper Andrejc

Tuesday, 2 December at 12PM



Martine Berden

firely + Open Health Hub





Questions

xShare Yellow Button

