Outils développés par InfoSol pour l'interopérabilité de ses données

Séminaire Semantic Linked Data – 12/10/2021

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Introduction – Contexte réglementaire et enjeux

- InfoSol est une unité de service ayant en charge les programmes de cartographie et de surveillance des sols dans le cadre du GIS Sol.
- InfoSol a développé un système d'information sur les sols de France.
- Dans le cadre de l'application de la directive INSPIRE qui vise à développer une infrastructure spatiale sur les données environnementales, et de la loi sur la république numérique qui vise à développer les données ouvertes (opendata).

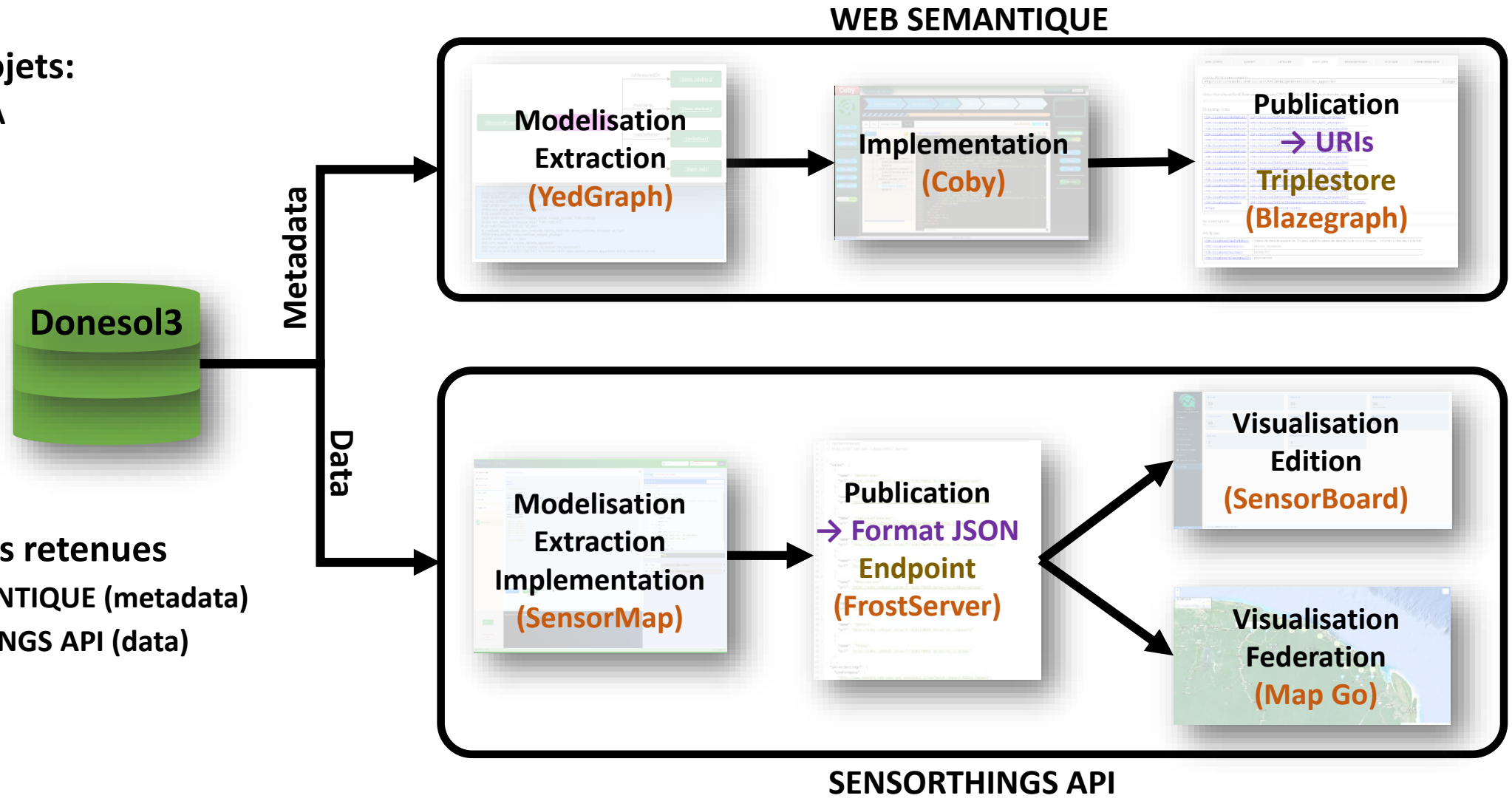
➢ **InfoSol doit donc diffuser ses données de manière interopérable et ouverte**

Introduction – Interopérabilité des données à Infosol

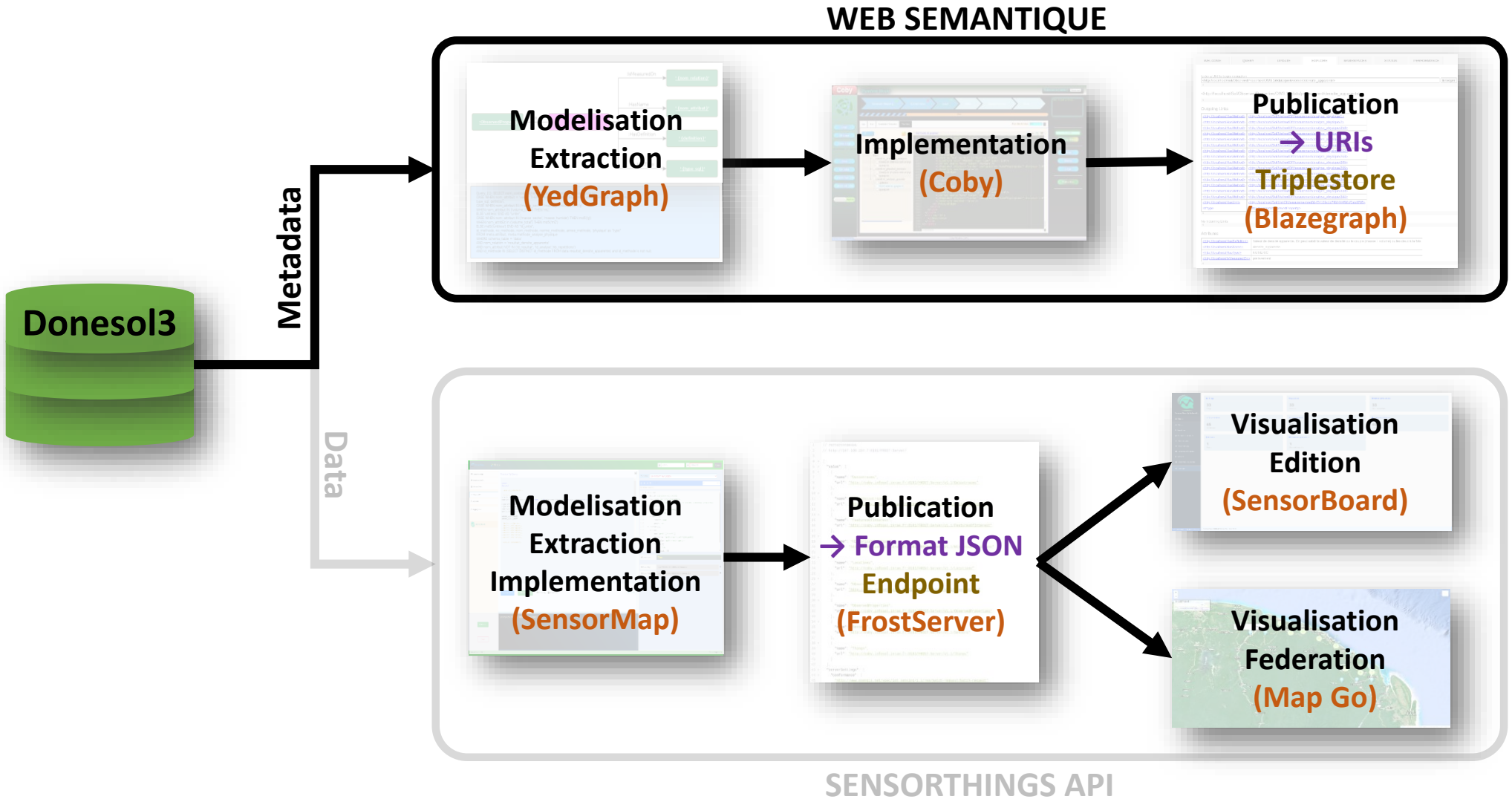
- **Objectif: rendre les données et metadonnées de Donesol3 Interopérables**

- **Différents projets:**
  - **FGU/SUPRA**
  - **Data4C+**
  - **EJP Soil**

- **2 technologies retenues**
  - **WEB SEMANTIQUE (metadata)**
  - **SENSORTHINGS API (data)**



Transition – Interopérabilité des données à Infosol



Web Sémantique – Modélisation des données

```
Query_(2): SELECT DISTINCT
CASE WHEN name in ('masse_seche', 'masse_humide') THEN 'g'
WHEN name in ('volume_total') THEN 'mL'
ELSE 'unitless' END AS "unit",
CASE WHEN name in ('masse_seche', 'masse_humide') THEN md5('g')
WHEN name in ('volume_total') THEN md5('mL')
ELSE md5('unitless') END AS "id_unite"
from meta.attribut
where schema_table = 'data' and nom_relation = 'resultat_densite_apparente' and name not in ('id_resultat', 'id_analyse','nb_repetitions','id_methode')
```

(2) Sol/UnitOfMeasurement/{id_unite}

```
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id_methode, no_method, name_method, standard_method, year_method, 'physical' as "type"
FROM meta.attribut, meta.methode_analyse_physique
WHERE schema_table = 'data'
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AND name NOT IN ('id_resultat', 'id_analyse','nb_repetitions')
AND id_methode IN (SELECT DISTINCT id_methode FROM data.resultat_densite_apparente) and id_methode is not null;
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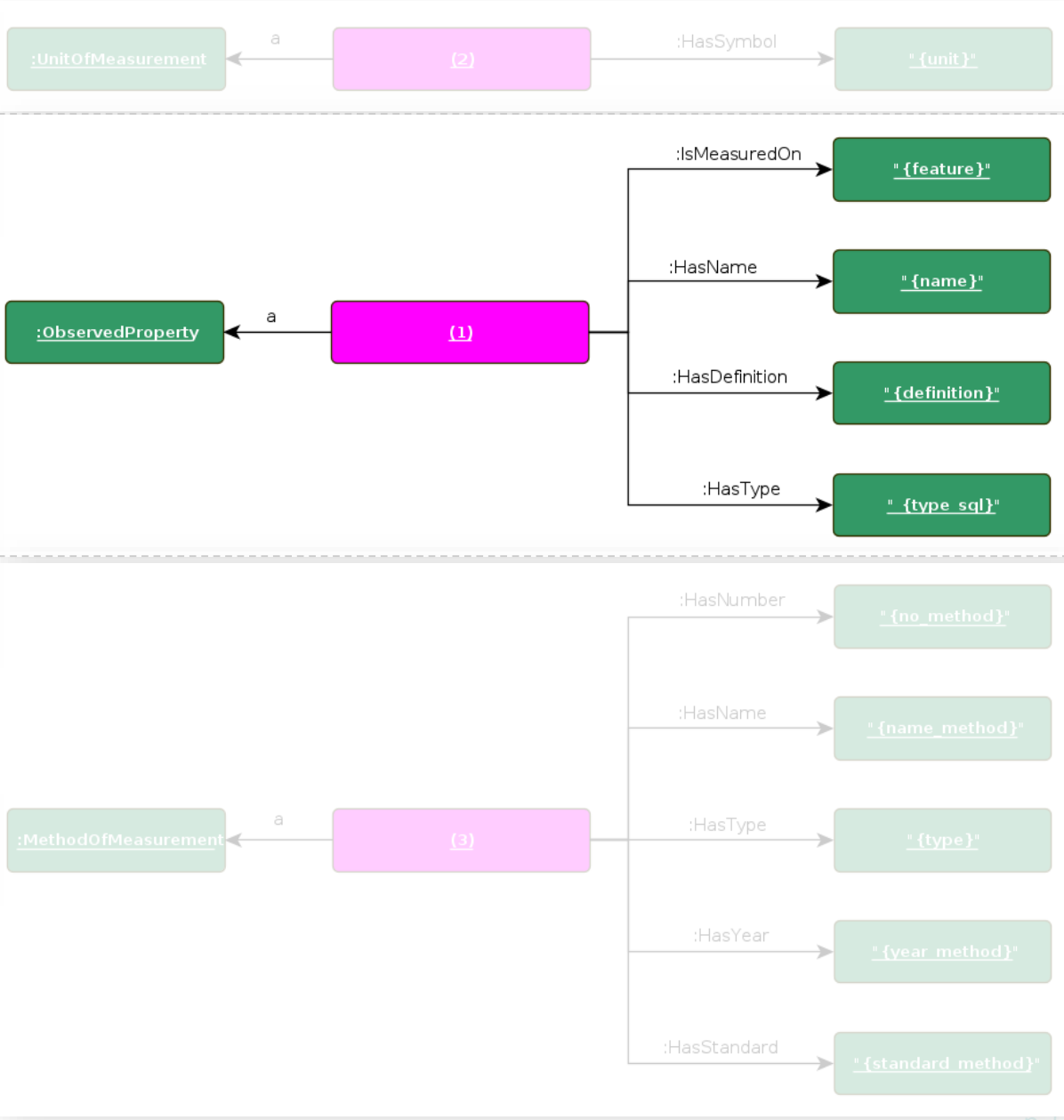

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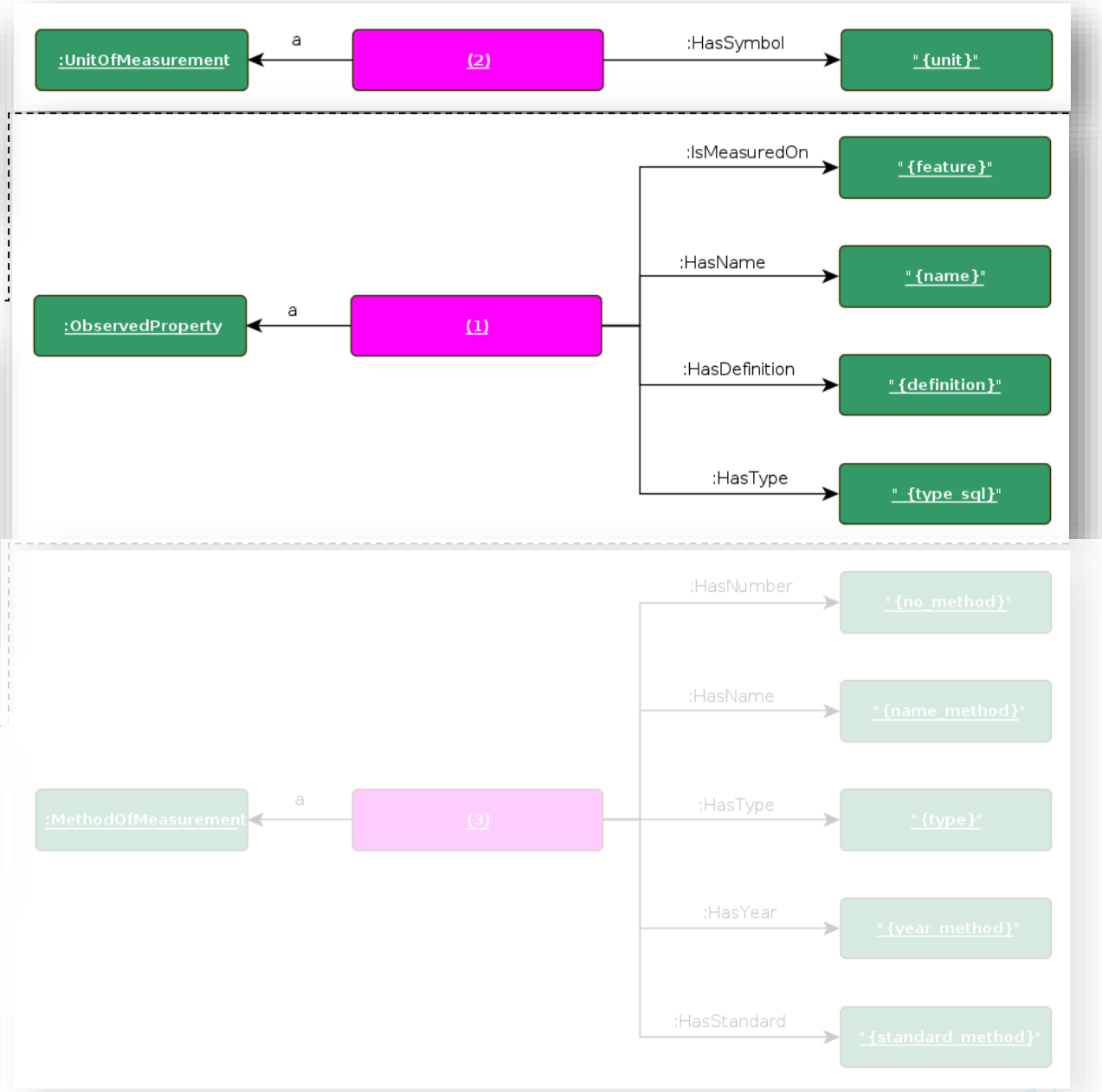

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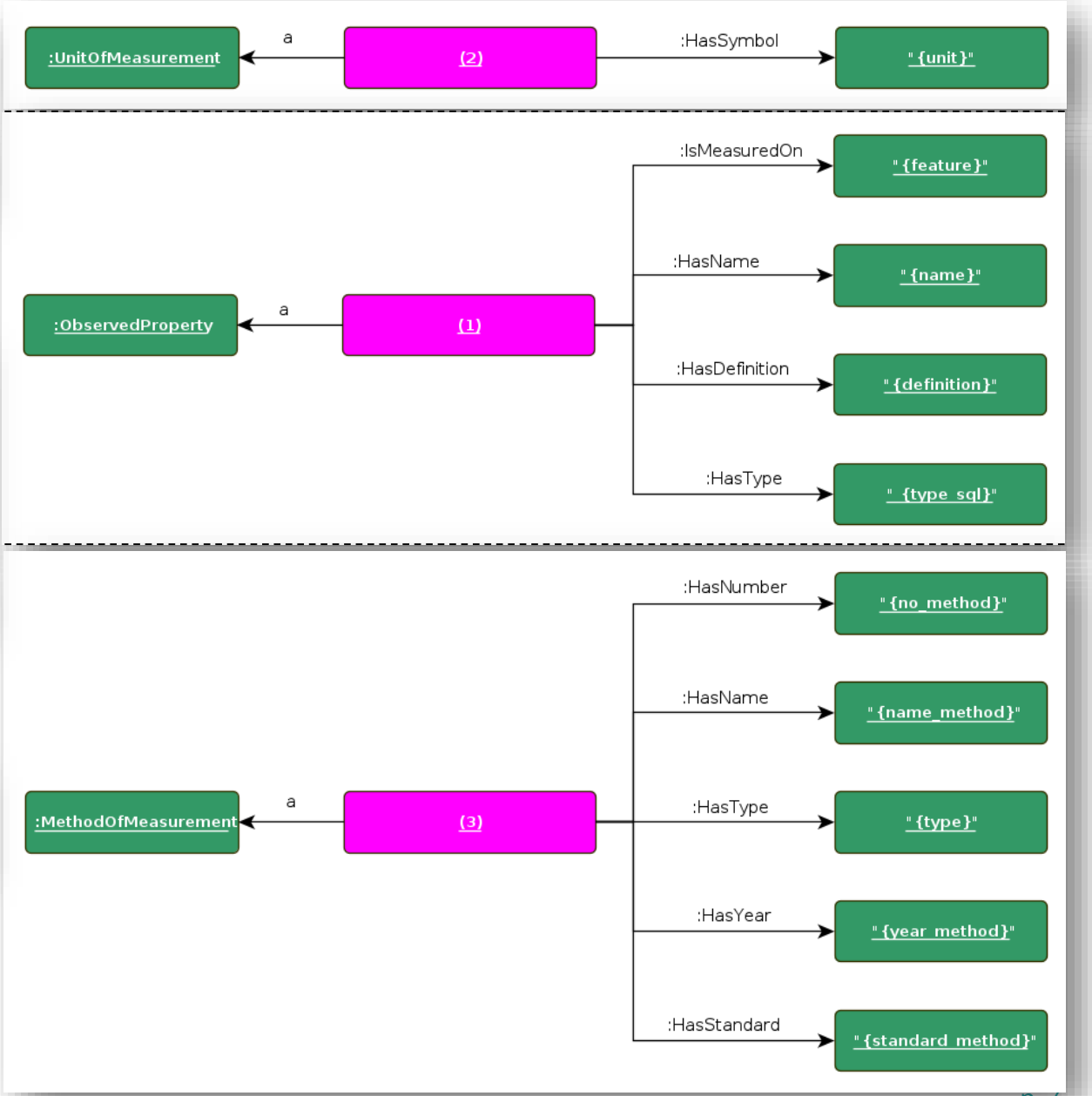

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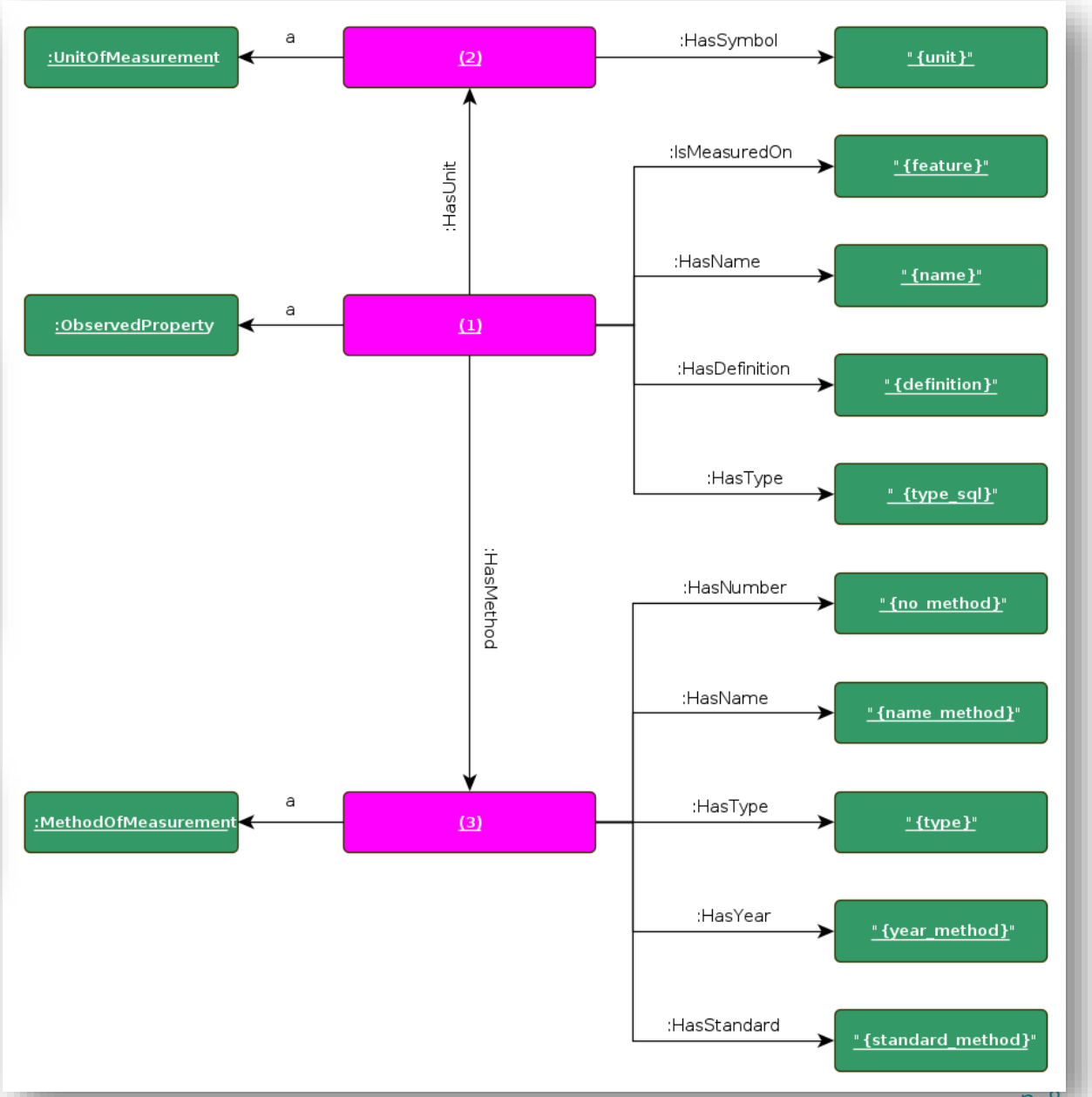
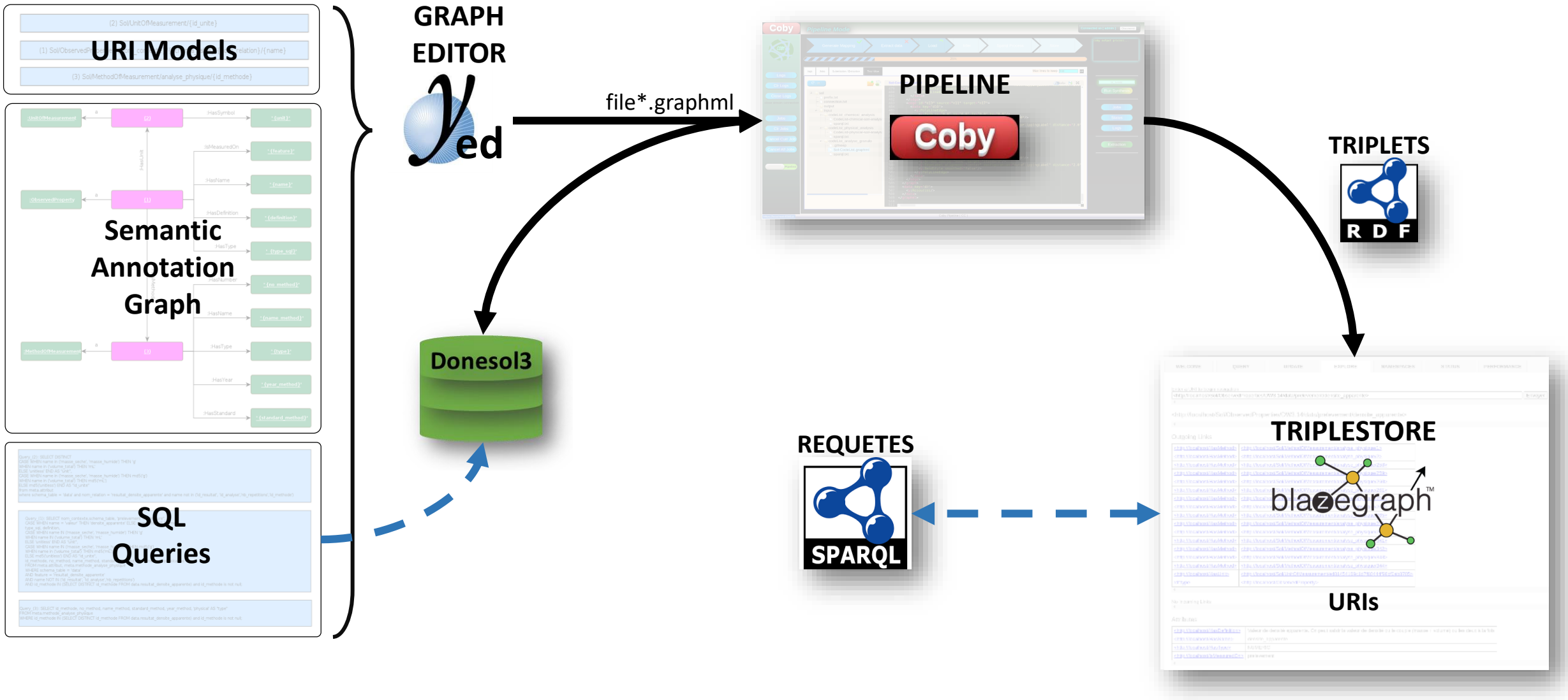


Web Sémantique – Publication des données



Web Sémantique – Déploiement du pipeline Coby

- Installer les paquets suivants: java; curl; psql; mvn; awk; gawk; fuser; lsof; xxd.
- Cloner le projet depuis le git online (https://forgemia.inra.fr/infosol/SolEil) dans un répertoire:

  $ git clone <SSH or HTTPS link from the git>

- Host Networking

```
docker run -d -p 2345:5432 --rm --name db-auth ecoinfo/coby-db-auth ; \
                                                                      \
docker run --net host -d --rm                                         \
           --name coby                                                \
           -e HTTPS_PORT=8585                                         \
           -e DB_URL_AUTHENTICATION="jdbc:postgresql://localhost:2345/coby-db-auth" \
           -e DB_LOGIN_AUTHENTICATION=postgres                        \
           -e DB_PASSWORD_AUTHENTICATION=admin                        \
           -v $(pwd)/src/SI/.:/opt/coby/pipeline/SI                   \
           -v $(pwd)/src/orchestrators/.:/opt/coby/pipeline/orchestrators \
           -v $(pwd)/infra/coby/.:/opt/coby/jaxy-server/overridden/   \
           -v $(pwd)/doi_export/:/var/doi-nfs-export/                 \
           ecoinfo/coby:1.6 /opt/coby/jaxy-server/overridden/run_server.sh
```

- Isolated Network

```
docker run -d -p 2345:5432 --rm --name db-auth ecoinfo/coby-db-auth ; \
                                                                      \
docker run -d --rm                                                    \
           --name coby                                                \
           -p 8181:8181                                               \
           -p 8585:8585                                               \
           -p 7777:7777                                               \
           -p 8888:8888                                               \
           -e HTTPS_PORT=8585                                         \
           -e DB_URL_AUTHENTICATION="jdbc:postgresql://db-auth:5432/coby-db-auth" \
           -e DB_LOGIN_AUTHENTICATION=postgres                        \
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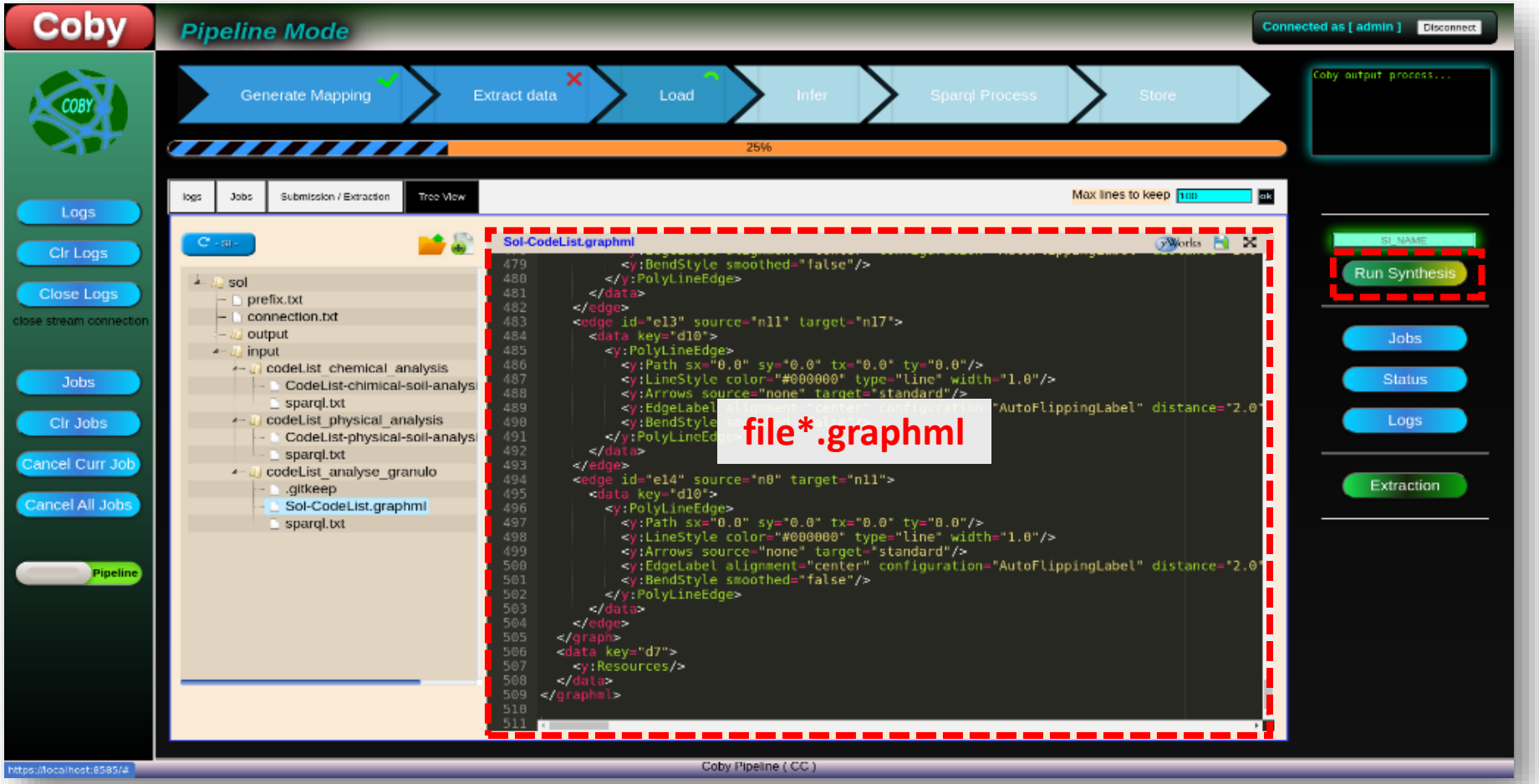
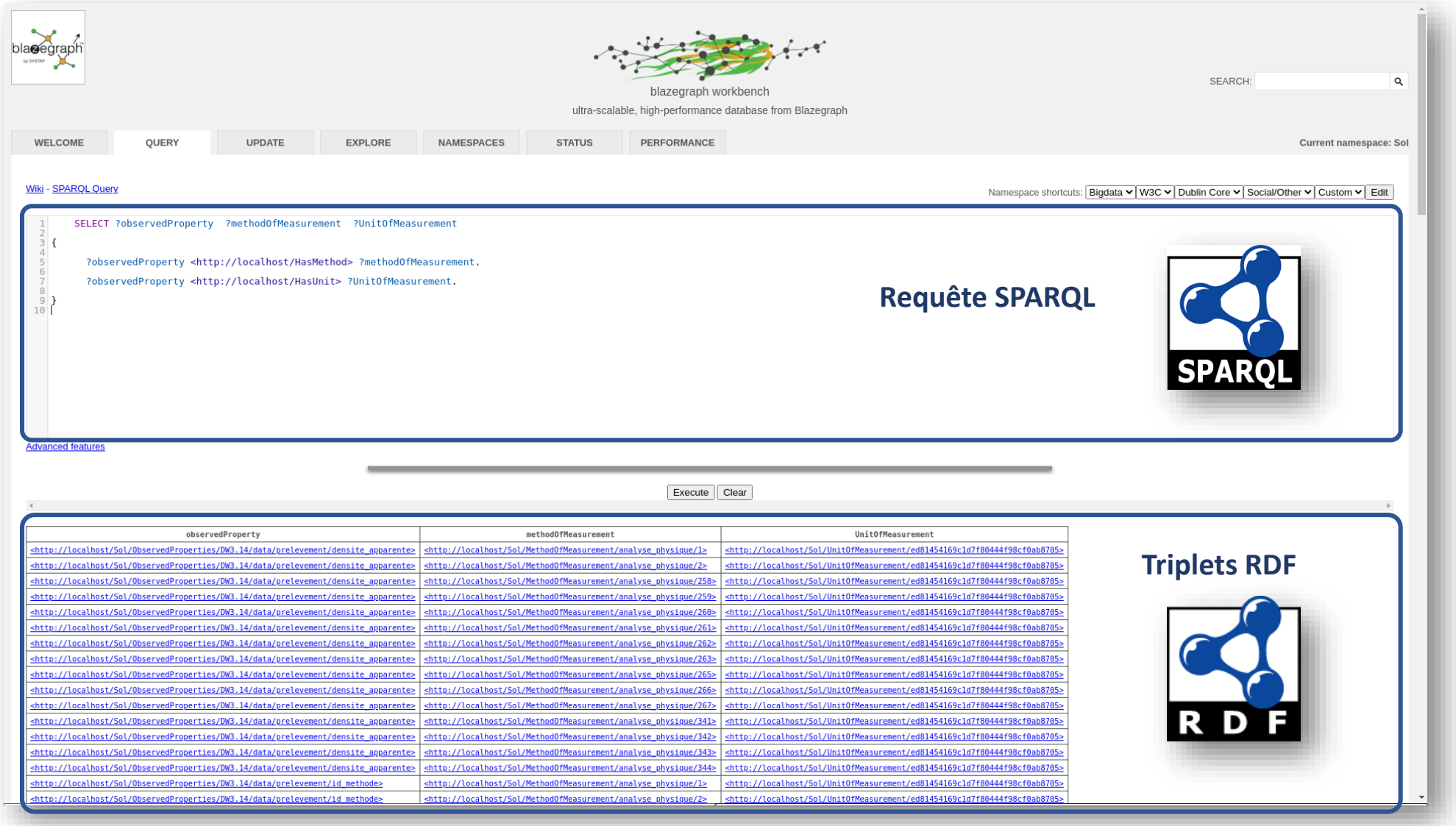
           -v $(pwd)/src/orchestrators/.:/opt/coby/pipeline/orchestrators \
           -v $(pwd)/infra/coby/.:/opt/coby/jaxy-server/overridden/   \
           -v $(pwd)/doi_export/:/var/doi-nfs-export/                 \
           --link db-auth:db-auth                                     \
           ecoinfo/coby:1.6 /opt/coby/jaxy-server/overridden/run_server.sh
```

- Go to the URL: https://localhost:8585

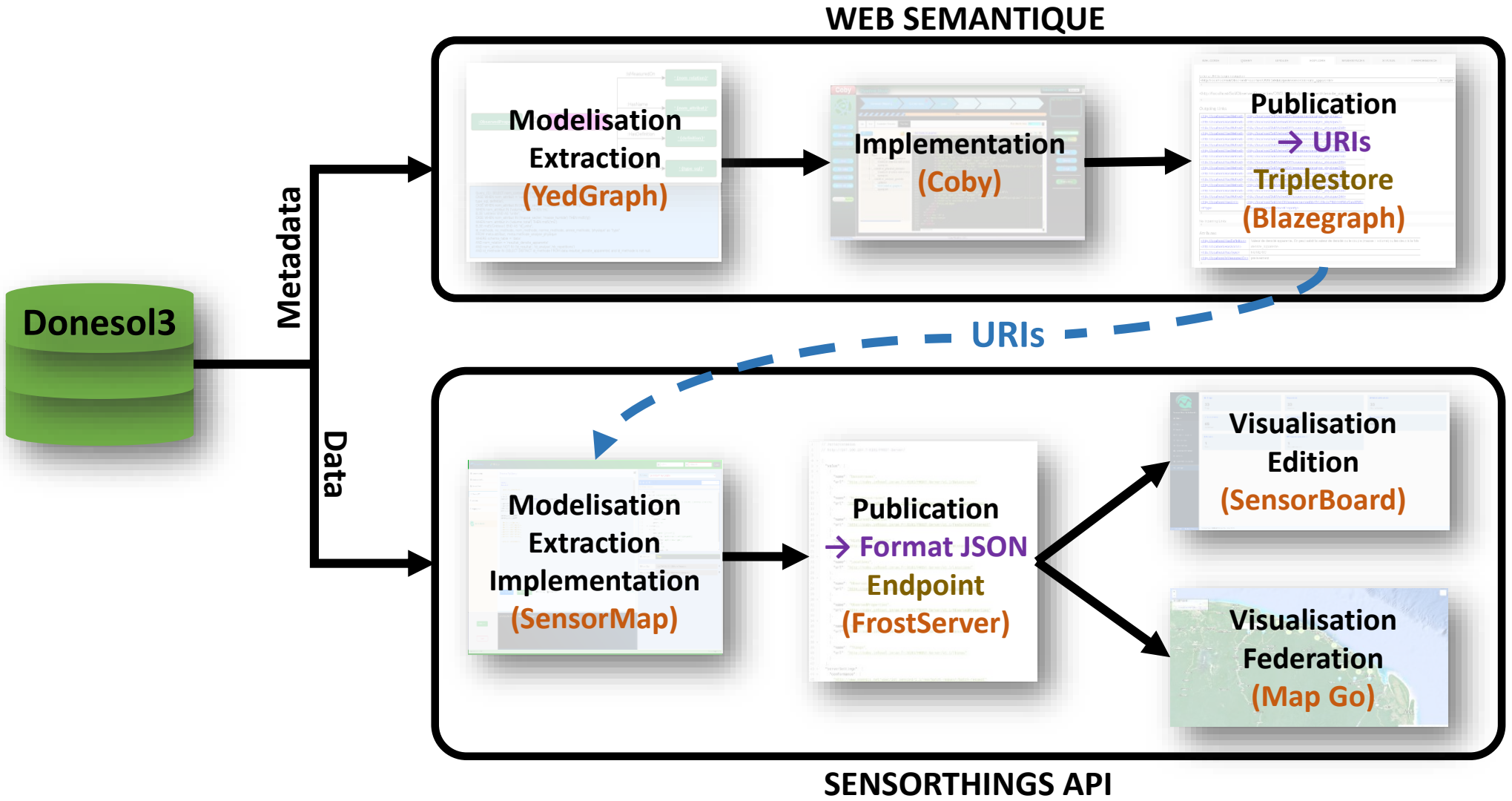
Web Sémantique – Publication des données via Coby



Web Sémantique – Publication des données: Blazegraph



Transition – Interopérabilité des données à Infosol



Conclusion

- **Travaux en cours**
- **Amélioration continue des outils**
- **Nécessité de créer une ontologie sol référencée W3C notamment pour publier les données (pas seulement les métadonnées)**
  - ➢ Travail en cours dans des projets internationaux:
    - EJP SOIL
    - ESIP SOIL Informatics

MERCI POUR VOTRE ATTENTION