Team 5

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Visualizing Sample and Ontology linkages between **HuBMAP** and **SPARC**
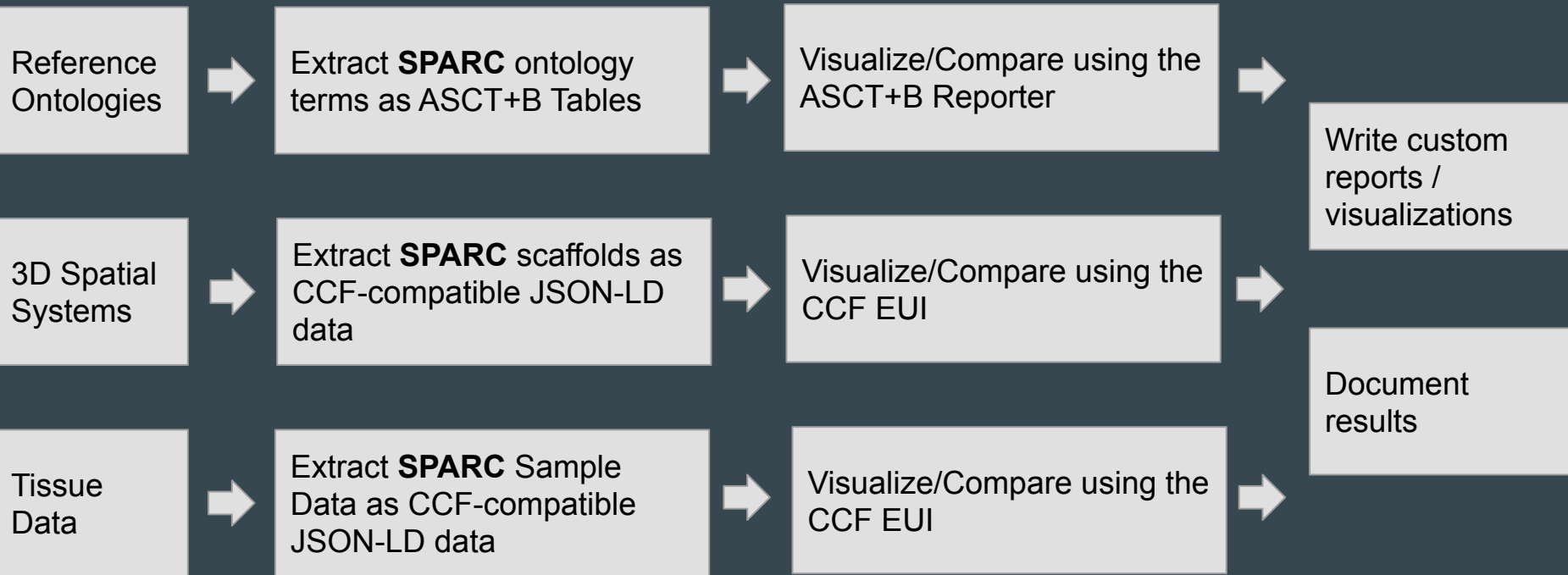
What, Why, and How

HuBMAP and **SPARC** have a rich reference system, both ontologically and spatially, tied to massive amounts of tissue sample data. Both systems are growing organically and are in danger of being incompatible. To enable future cross-pollination and compatibility, we will map and track the overlaps between the systems.

High Level Tasks

- Map Reference Ontologies, 3D Reference Systems, and Tissue Sample Data to CCF-compatible formats.
- Compare and contrast data using off-the-shelf software: **HuBMAP** CCF ASCT+B Reporter and **HuBMAP** CCF EUI.
- Write custom reports and visualizations to succinctly describe the overlaps in **HuBMAP** and **SPARC**
- Document results

Workflow

Reference Ontologies	→ Extract **SPARC** ontology terms as ASCT+B Tables	→ Visualize/Compare using the ASCT+B Reporter	→
3D Spatial Systems	→ Extract **SPARC** scaffolds as CCF-compatible JSON-LD data	→ Visualize/Compare using the CCF EUI	→ Write custom reports / visualizations
Tissue Data	→ Extract **SPARC** Sample Data as CCF-compatible JSON-LD data	→ Visualize/Compare using the CCF EUI	→ Document results

Tech Stack

GitHub (SCM), GitHub Actions (CI/CD), GitHub Pages (static file hosting), TypeScript (custom software), vega-lite and/or d3.js (visualization), Markdown (documentation)

After each commit to the main branch and on a regular basis, custom code will query the SPARC infrastructure (probably Elasticsearch for datasets, Neo4J for ontologies, scaffolds TBD), extract data in CCF-compatible formats, build project website, and publish to GitHub Pages.