

EMERSE Community Meeting



2023-Feb-07

<https://project-emerse.org>

Plan for today

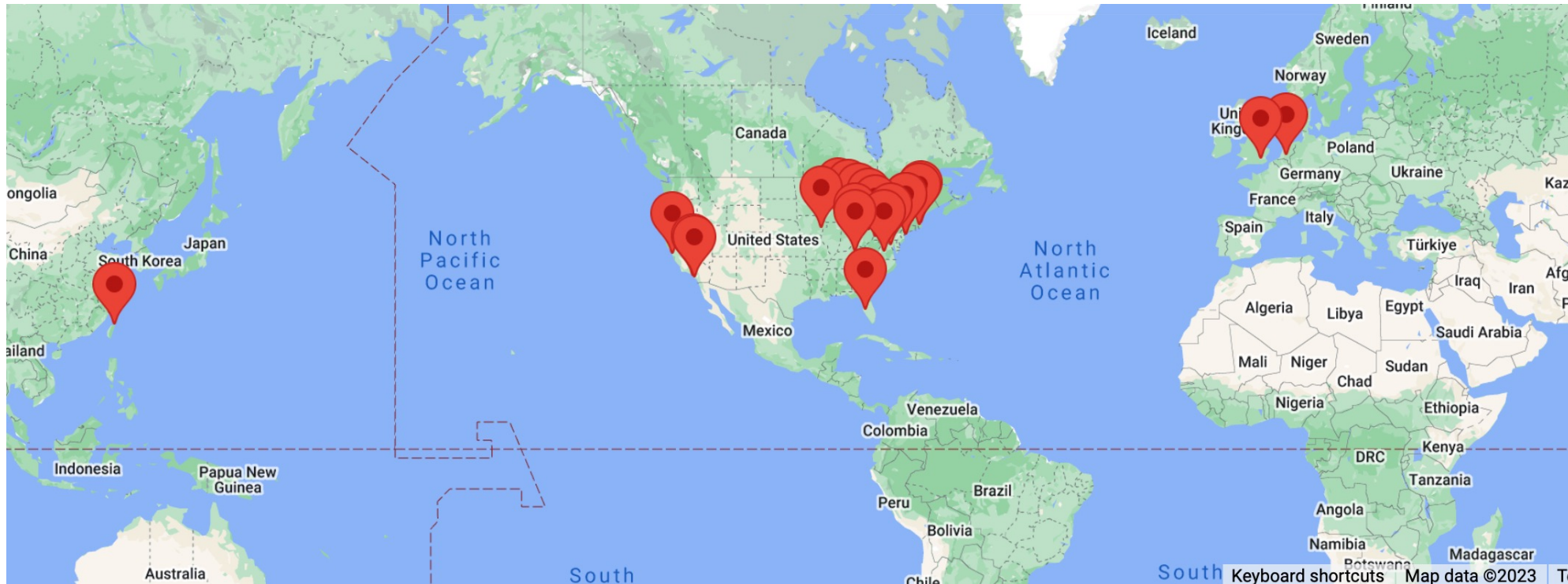
- Software Updates
- Work-in-Progress
- Site Spotlight: University Medical Center Utrecht (Netherlands)
- Discussion: Administration, Architecture and Technology
- Open Forum

Housekeeping

- New format: *Zoom Meeting* not *Zoom Webinar*
 - More opportunities for interaction
- Please stay muted, unless you would like to ask a question or make a comment
- Feel free to use the chat function to type questions or provide comments
- We will answer questions throughout
- We will record this meeting

A Growing Community

- Registrants from > 20 sites
 - <https://project-emerse.org/community.html>



Acknowledgements

- EMERSE has been supported by:
 - NCI ITCR program
 - NCATS/CTSA/MICHR
 - Michigan Medicine
 - Department of Learning Health Sciences
 - Office of Research
 - Health Information Technology & Services

Software Updates

- Bug Fixes
- Compatibility with Solr 9
- 6.4.2 - User Restrictions
- 6.4.3 - New Privileges

Work in Progress

- Document Filters
- Natural Language Processing (NLP)

Site Spotlight

- University Medical Center Utrecht (Netherlands)
- Mark Snackey, Product owner | Director of Information Technology, Research & Data Technology, Research IT – Analytics





EMERSE @ UMC Utrecht

EMERSE Community Meeting, 7 February 2023

Mark Snackey

m.snackey@umcutrecht.nl



UMC Utrecht

Background

University Medical Center Utrecht

Utrecht, The Netherlands

1 of 7 academic hospitals in NL

13.000 employees

1.500 researchers

75.000 patients each year

6.000.000 documents each year



What are our goals regarding free text?

- Identifying patients for **inclusion in research studies** and quality registries (and easily checking feasibility)
- **(Re)use text data for research** and eliminating the need for manual data collection
- **Evaluating health care outcomes**
- **Generating management information**



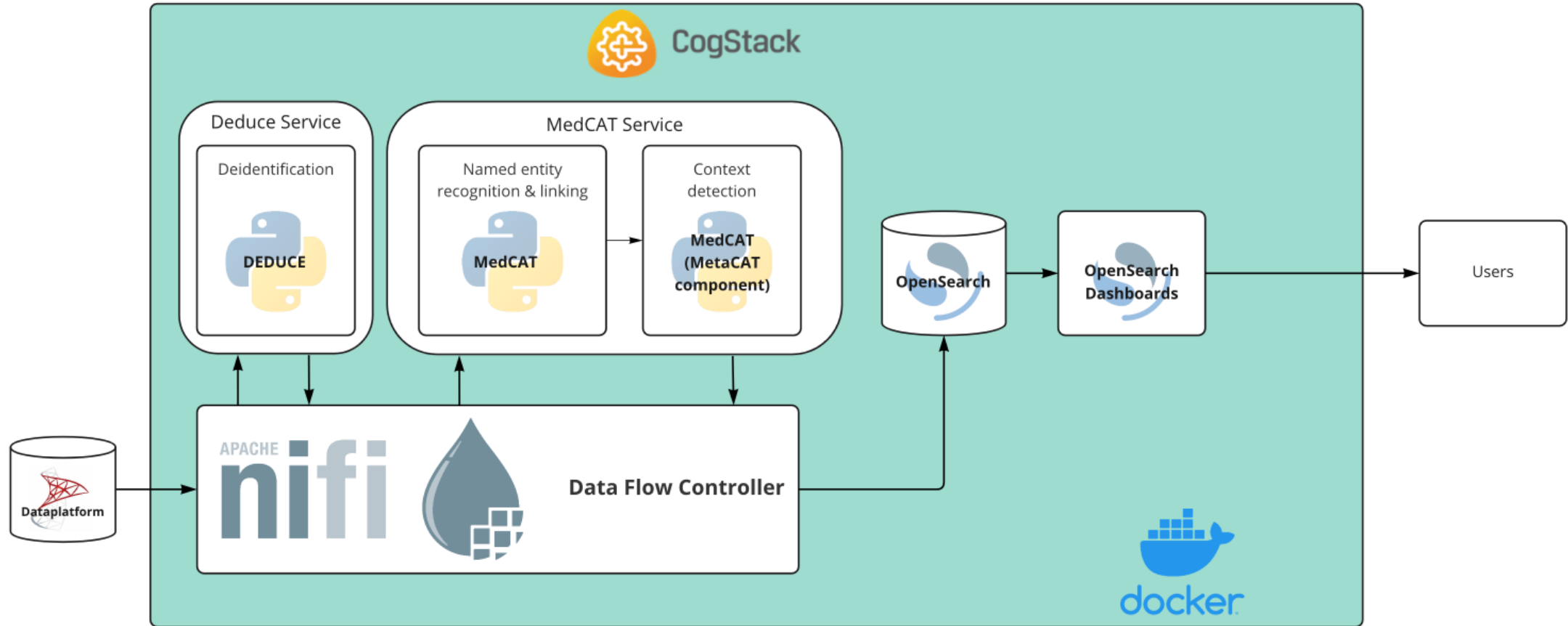
Searching the data

- Exploration
- Ad hoc questions

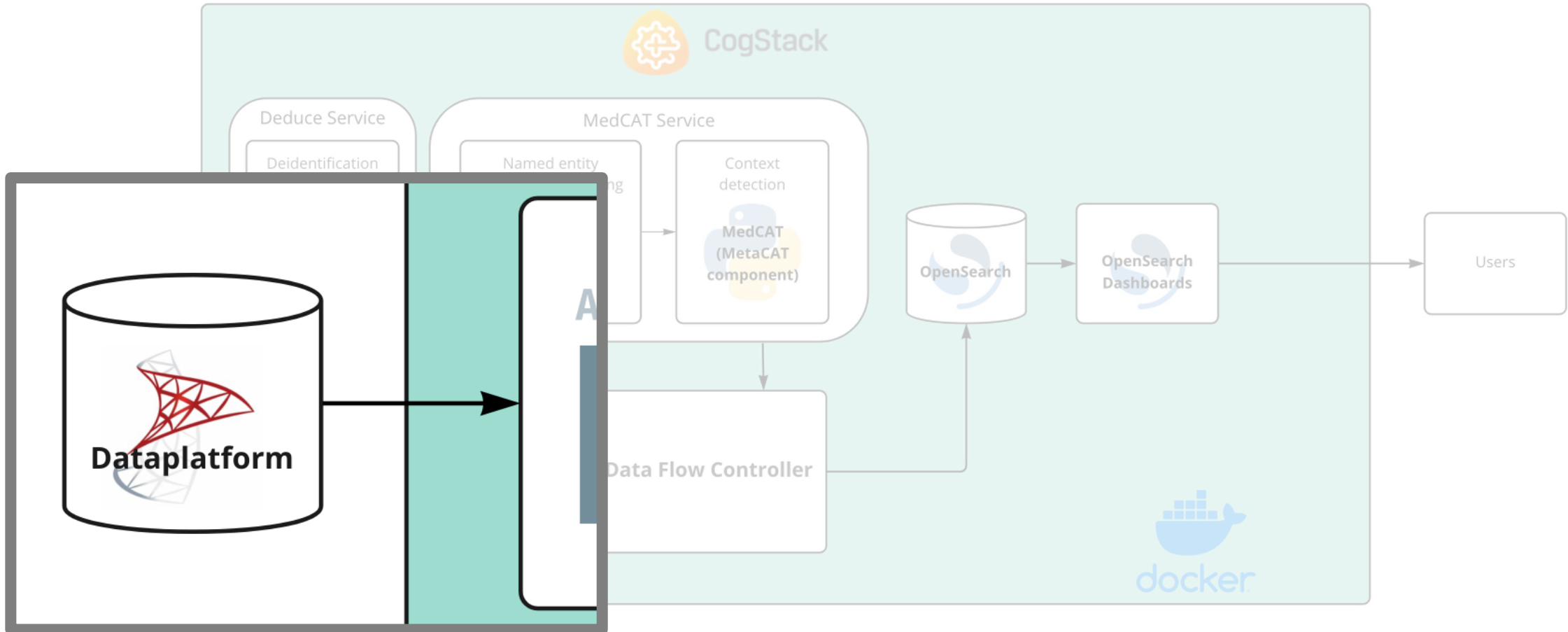
Structuring the data

- Analytics
- Production-ready pipelines

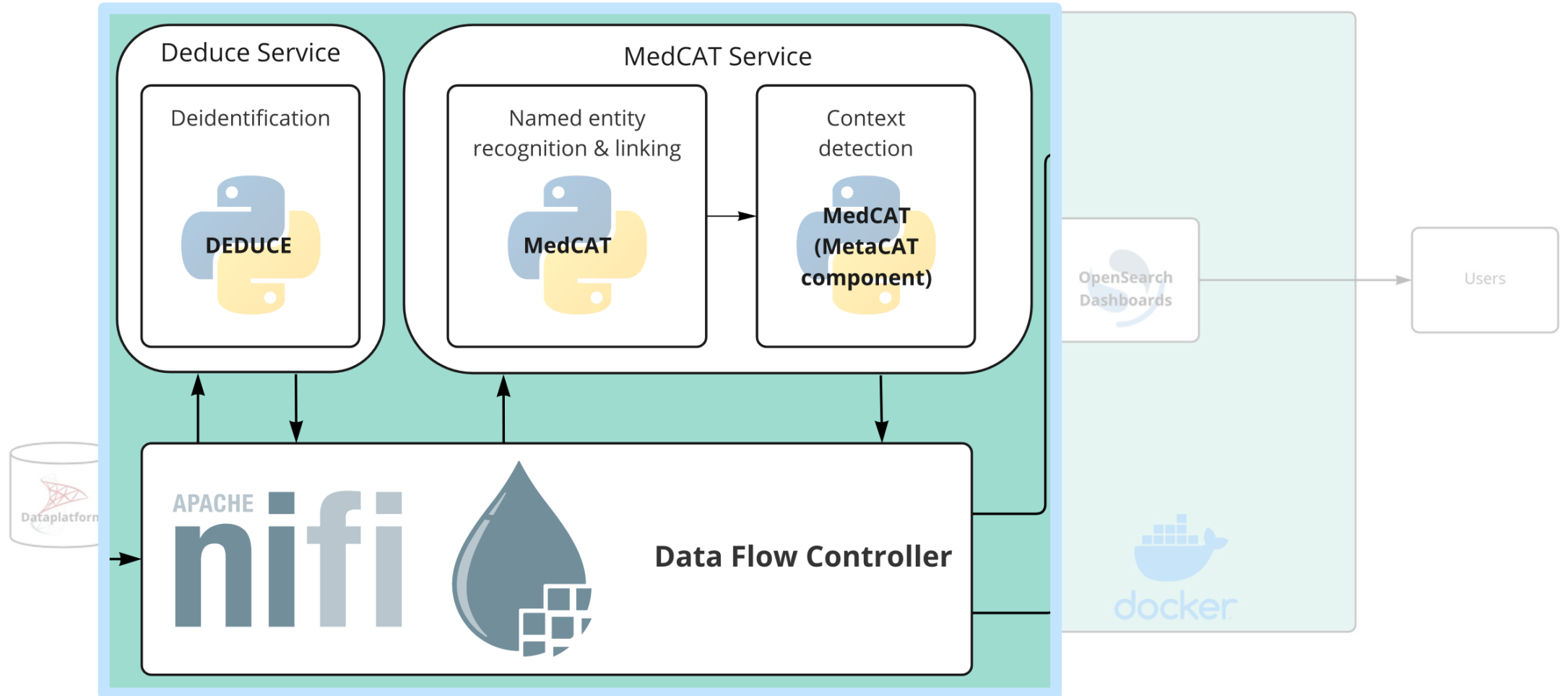
What do we have currently?



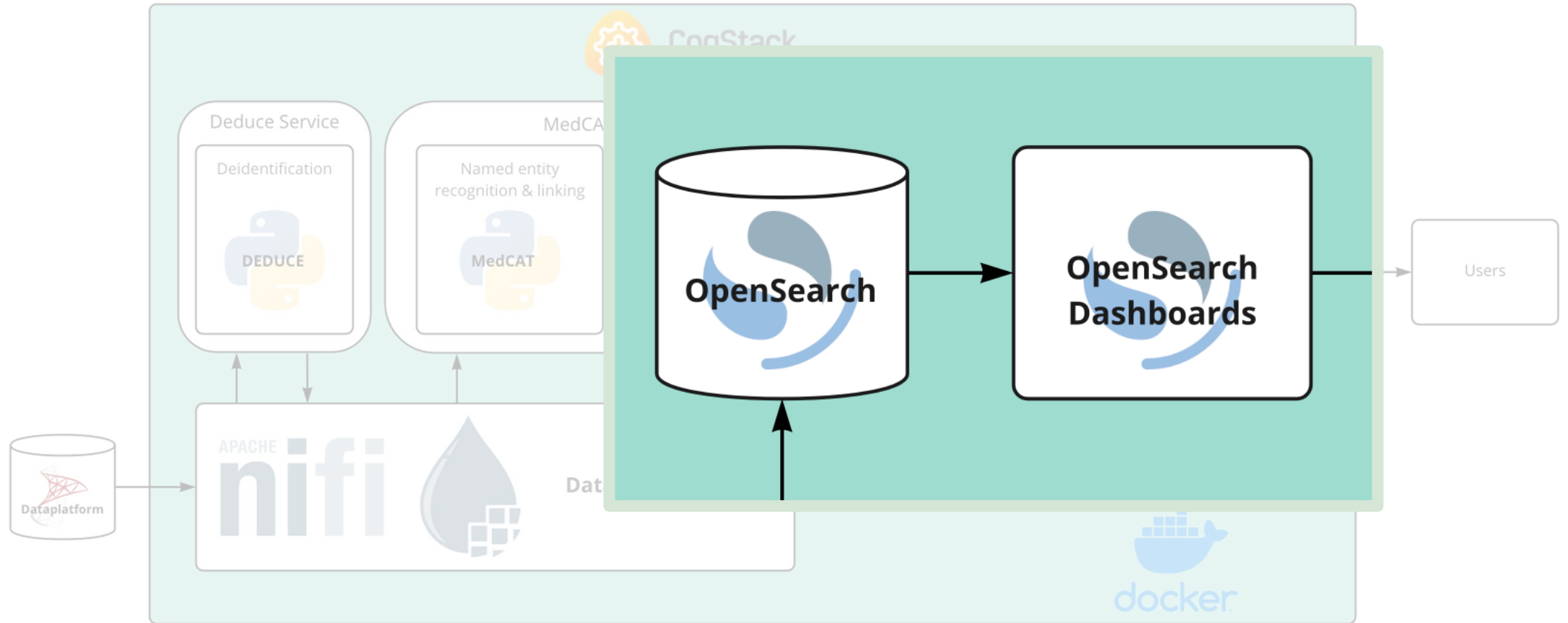
What do we have currently?



What do we have currently?



What do we have currently?



OpenSearch Dashboards

The screenshot shows the OpenSearch Dashboards interface. At the top, there is a navigation bar with 'Discover' and several action buttons: 'New', 'Save', 'Open', 'Share', 'Reporting', and 'Inspect'. Below this is a search bar containing the query 'diabetes & gewichts*' with a 'KQL' label and a 'Refresh' button. To the left of the search bar is a filter sidebar. It has a dropdown menu set to 'ntvg_annotated', a search field for field names, and a 'Filter by type' section with a count of 0. Below these are two lists: 'Selected fields' containing '_source' and 'Available fields' containing '_id', '_index', '_score', '_type', 'docid', 'nlp', and 'text'. The main content area shows '7 hits' and three search results. Each result is a JSON object with a 'text' field containing Dutch medical text. The words 'diabetes' and 'gewichtsverlies' are highlighted in yellow in the original image. Red boxes and numbers 1 through 5 are overlaid on the image to highlight specific UI elements: 1 points to the filter dropdown, 2 to the search bar, 3 to the '+ Add filter' button, 4 to the field selection lists, and 5 to the search results pane.

1: Index

Selecting the dataset

2: Search bar

Input search terms (e.g. with AND/OR and *)

3: Filters

Here you can filter on e.g. date or type of document

4: Columns

Here you select the columns you want shown in the result pane

5: Result pane

This is where the search results show

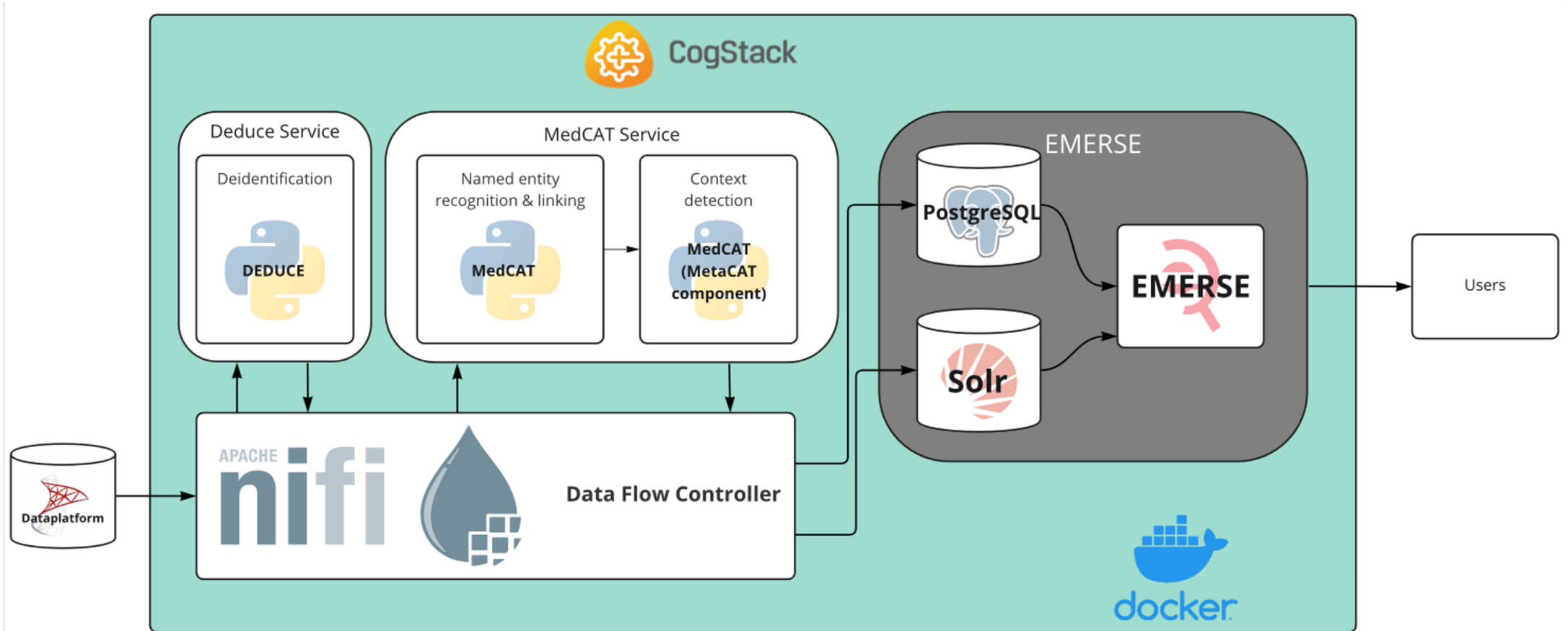


CogStack

OpenSearch



What do we have currently?



Why EMERSE?

- Basic search functionality in a **user-friendly interface**
- Search and results at the **patient level**
- Create, share and **export patient lists**
- **Integration** in our **existing architecture** (e.g. Dataplatform and Apache NiFi)
- Good **documentation for implementation**
- And... **Very pleasant team to work with**

Also looking forward to the future developments:

- **Expansion of search functionality through integration of NLP**
- **More options for filtering on structured (meta)data**
- **Advanced functionalities for granting authorisations (on the data-level)**



Any challenges for implementation?

- Determining the **relevant (meta)data** to add
- Specific requirements for **data authorisation**
- Mix of **Dutch and English** language
 - Not a challenge, but an adaptation: adding our own Dutch synonym list
- Adapting **user documentation** for our use cases; making it more **bite-sized**
- Making our own **Docker container** implementation of EMERSE
- **Switching to Solr** database (coming from Elasticsearch/OpenSearch)



Future

- **Q1 2023** **Hospital-wide implementation of EMERSE, growing the amount of users**

Introduction of EMERSE at other UMC's of the consortium
- **Q2 2023** **Expanding our team, intention to contribute to the EMERSE project**

Developing a Dutch clinical NLP library for performing NLP and text processing tasks
- **>Q3 2023** **T.b.d.**



Consortium of Dutch UMC's for development & implementation of text mining technologies



umcg

Radboudumc



Thank you!

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Mark Snackey

m.snackey@umcutrecht.nl



UMC Utrecht

Administration, Architecture and Technology

- Roles, Privileges & Permissions

Open Forum

- Tell us what you're working on
- Share ideas
- Ask questions

Upcoming talks

- February 21, 2023: NCI Emerging Technologies Seminar Series
 - “EMERSE: an easy-to-use, self-service search engine and chart review tool for EHR notes”
 - Speaker: David Hanauer (U of Michigan)
 - Moderator: Dana Rollison (Moffitt Cancer Center)
 - <https://cssi.cancer.gov/news-and-events>
- March 15, 2023: AMIA Informatics Summit (Seattle, WA)
 - “Creating Clinically-Curated Real-World Data through the Marriage of OHDSI/OMOP and the Electronic Medical Record Search Engine (EMERSE)”
 - Speaker: Mark Beno (Case Western Reserve U)

Wrap up

- THANK YOU
- Next Meeting: TBD (May/June 2023)
- Please complete meeting survey
 - <https://bit.ly/emerse-community-feb-2023>

