Axon Real Time Operations Team - Software Engineer Homework

An Overview
At Axon Software Engineers highly engaged in multiple phases of product development: ideate, design, implement, release and operate the features, end-to-end. We seek for engineers with clear communication, constantly seek for improvements, logical thinking, good computer science fundamental and coding skill. In this homework, we expect candidates to demonstrate their ability to write a clear technical design document, good rationale on technical decision and last but not least, implementation skill.

Problem Statement
Dispatch++ team is building a Call For Service (CFS) management service with the following requirements

1. Dispatcher should be able to create a CFS with the following information: event number, event type (with type code), event time, dispatch time, responder.
2. Dispatcher should be able to search for CFS within a time range with paging and sorting order.
3. Dispatcher should be able to search for CFS that assigned to a responder.
4. CFS belongs to different agencies are not allowed to be exposed to other agencies.
5. Dispatcher and responder should belong to only one agency.

Your task is to design CFS service to support the above requirements and implement the API to support CFS search by time range.

Samples
An CFS event in JSON

```
{
    "agency_id": "4f9b99eb-490a-484e-bade-15e3841dfda9",
    "event_id": "562c89de-f140-4482-8ef5-5f1703b286b6",
    "event_number": "3234019",
    "event_type_code": "SMO",
    "event_time": "2020-11-25 07:36:04.193",
    "dispatch_time": "2020-11-26 13:55:46.466",
    "responder": "OFFICER_001"
}
```

Your Submission Should Include

- A technical design document includes
    - System design.
    - Data models and database design.
- A project includes
    - Implementation of CFS search by time API as specified in requirement item #2.
    - Guideline how to run your project and how to test your API.

Technology requirements

- Please use any programming languages you are comfortable with.

How to submit

- You can use Git or zip file or any format you could share with us for the review.

In order to be fair to all candidates, please refrain from sharing your solution on public Git repository.

Time limit

- There is no hard time limit for this homework. But we expect to receive your solution **within 1 week**.

Good luck,
The Axon team