

# Design and Implementation of an Adaptable Metric Dashboard

## Summary

Inner source (IS) is the utilization of open source development practices within an organization. To understand inner source collaboration, we continuously extract patch-flow (flow of code contributions) in software organizations using multiple Java tools in our Collaboration Metrics Suite (CMSuite). We do not yet have tools to visualize metrics based on the extracted raw patch-flow data. Also, it is not fully known to us yet which metrics will be needed in the future.

In this thesis, the student will extend the CMSuite with client and server components for a metric dashboard. The components will allow us to add metrics not foreseen at the initial design time. Addition of a new metric will require minimal changes to server code and no changes to client code.

## Work Results

- Literature and open source project review
  - Design patterns, architectural patterns for plugin architectures
  - REST best practices, patterns
  - Dashboard and reporting tools, frameworks, libraries
- Thesis results
  - Extended CMSuite to visualize metrics in a dashboard
    - Developed Java-based REST service for metric results
      - Provides results of metric calculations
      - Provides directory of metrics and meta data
      - **Allow for easy addition of metrics not known at initial design time**
        - **Plugin architecture**
        - **Own DSL, existing DSL, existing scripting language for definition of calculation**
    - Developed **AngularJS 2.0** client component for metric dashboard
      - Displays metric dashboards for persons, IS projects, org. units, whole context
      - **Requires no change to client source code when metrics are added**
      - Visualizes metrics based on information from server component (and user preference)
      - Integrates into CMSuite's existing AngularJS client

## Supervisor

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