Aerospace Dilution of Precision Automation

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BACKGROUND

The Aerospace Corporation collaborated with California State University - Los Angeles to develop an automated and user-friendly interface for visualizing Dilution of Precision (DOP) data. During satellite monitoring, Aerospace utilizes the analysis software Satellite Orbit Analysis Program (SOAP) to assess performance using DOP data as a metric. However, this approach can be inefficient and time-consuming. This is why automation is desired, and the newly developed interface streamlines the process and minimizes the need for expert intervention.

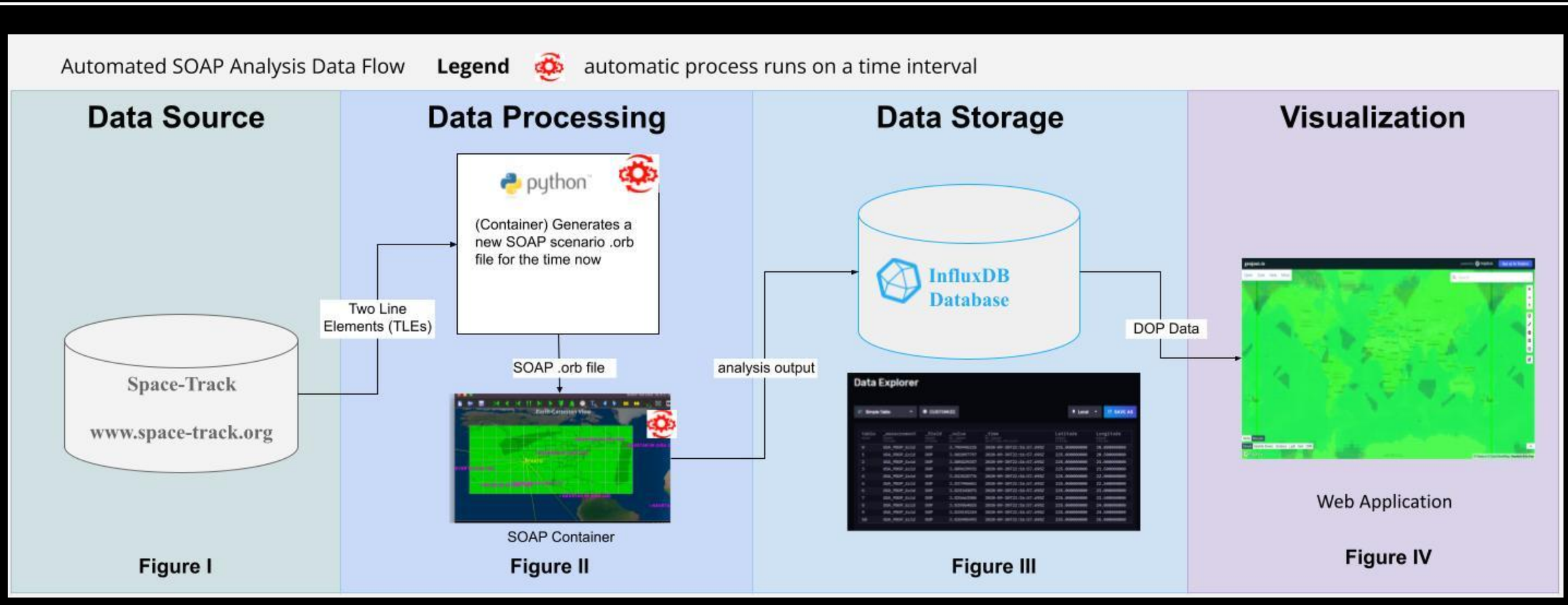
OBJECTIVE

- Create a user-friendly interface that utilizes SOAP's software to automate DOP value calculations and generate intuitive visualizations, requiring minimal expertise from the user.

DELIVERABLES

- Visualize DOP data on a world map using a web library
- Automate the process and implement more modern tools

PIPELINE



I. Retrieve open-source satellite data from Space-Track
II. Process satellite data
III. Generate DOP analysis and write the output to InfluxDB
IV. Visualize DOP data with web app

FUTURE WORK

- Improvements to the Web Application to be more appealing and efficient
- Cloud saving the data to a hosted server
- Improvements to data pipeline to handle larger volumes
- Develop an algorithm for compressing visual DOP data

MORE INFO

TECHNOLOGIES