Work Item D

Gather and prioritize HO-specific issues relating to CSB data, including but not limited to Nautical Cartography

Report to CSBWG 15

Hybrid Meeting

23 April 2024

By Anthony Klemm, NOAA

Work Item Lead (Acting)

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Work Item Update

D-1 – Status: Ongoing

Produce guidance for use of CSB data for SOLAS nautical cartography and other products

- Update 1: Hans Oias (Sweden) has submitted the wording in S-44 regarding Annex A (the matrix for aiding data quality classification):

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Work Item Update

D-1

In the draft for S-44 Ed.6.2.0 that has been sent to HSSC now have the introduction text slightly rewritten in order not to only cover Bathymetric Surveys.

From: This publication aims to provide a set of standards for hydrographic surveys primarily used to compile navigational charts essential for the safety of navigation, knowledge and the protection of the marine environment.

To: This publication aims to provide a set of standards for hydrographic surveys **and a tool for classification of other bathymetric datasets**, primarily used to compile navigational charts essential for the safety of navigation, knowledge and the protection of the marine environment.

Work Item Update

D-1

Planned activities:

- Continue to test the S-44 Annex A matrix
- Share methodologies for comparative uncertainty/quality assessment for CSB data (US and Canada primarily use a comparative approach against bathymetry of known quality and age)

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Work Item Update

D-2 – Status: Ongoing

Evaluate the CSB data stored in the IHO DCDB for use in nautical cartography.

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Work Item Update

D-2 Updates

- The DCDB CSB Point Cloud API has been tested and works well
- Will test the S3 Bucket Access directly and provide feedback to DCDB and the Working Group
- Also pleased with the news that DCDB is exploring ways to access CSB file metadata to aid in processing the data from the DCDB Point Cloud

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Work Item Update

D-2 Updates (Continued)

- Michel Breton (Canada) –
- Creating tools for CSB ingest into dataflow:
- 1. Quality Assessment with Comparitive Statistics
  2. Tidal Reduction
  3. NavWarn Assessment
- ***Michel will be presenting on this work at the Canadian Hydrographic Conference next month in St. Johns, Newfoundland and Labrador***

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Work Item Update

D-2 Updates (Continued)

- US/NOAA (Jeff Marshall and Anthony Klemm)

- Have built data pipeline (in testing at the moment) for automated CSB extraction, processing, and quality assessment to deliver to our National Bathymetric Source and Nautical Charts

- 1. Data Scraper (using DCDB Point Store API) and a tiled tessellation scheme
  2. Data Processing (data cleaning, automated tidal corrections, and data-derived transducer draft)
  3. Spatial Database population with processed CSB for analytics, uncertainty modeling, metadata creation, and final data package export (at a vessel-transit level)

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Work Item Update

D-2 Updates (Continued)

- US/NOAA (Jeff Marshall and Anthony Klemm)
- Have completed the Data Rescue analysis for one contributor (“TUG RANGER” from Rose Point with timestamps ~2002) … there are others that still need fixing
- Referenced AIS data to investigate any time offsets
- A static time offset of 7168 days (over 19 year difference)
- Is this something to fix at DCDB level? How do we make sure others can use this analysis?

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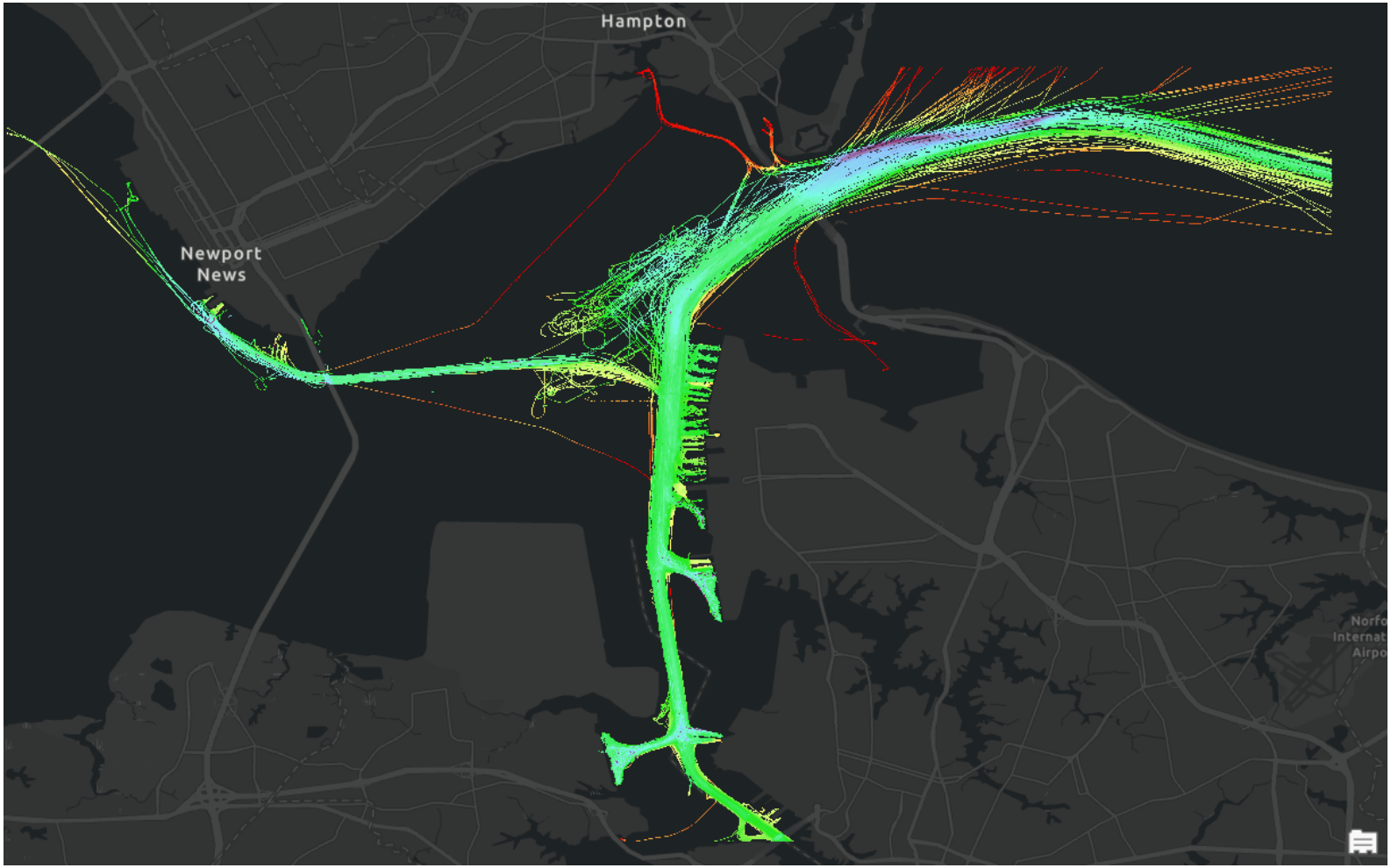
Work Item Update – TUG RANGER data rescue result - 2.1 million points just in this one area -



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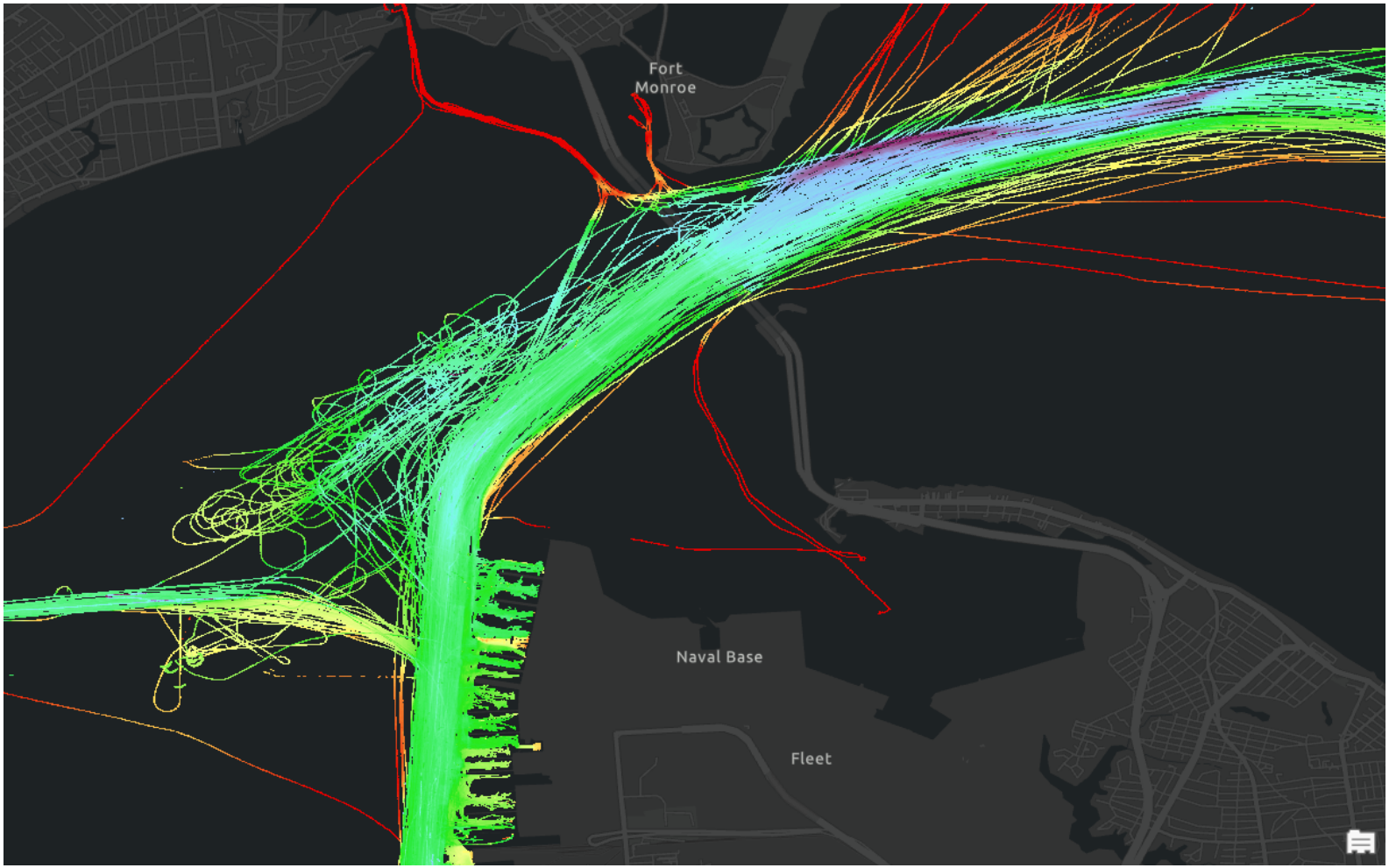

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Work Item Update

D-2

Planned activities:

- Continue to test the DCDB API Access Points, and test new capabilities as they come online (i.e. metadata access via AWS S3 bucket to use with point store data)
- Canada presenting at CHC2024 on CSB workflow
- Continue with Data Rescue project with other vessels with erroneous timestamps in DCDB
- Continue to share automated tools involved with automated processing and outlier removal

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Work Item Update

D-3 Updates – Status: Ongoing

Engage with industry to ensure the required tools exist to efficiently use DCDB-hosted CSB data for navigational products.

- Canada has started discussions with Teledyne on a project to build tools for CSB processing, but project is on hold for now
- Canada has been using VBI Compare Tool with satisfactory results
- US/NOAA has in-house (and open-source) tools to extract, process, and store/export CSB data that is also available (contact anthony.r.klemm@noaa.gov for more information)

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Work Item Update

D-4 Updates – Status: Ongoing

Engage with other IHO WGs to ensure suitable standards exist for describing CSB data and displaying CSB data on ECDIS.

- No real updates at this time.

- NOAA is focusing on packaging and describing the quality of the data so it is used in our National Bathymetric Source (our national bathymetry database) based on our standard data supersession rules. Based on the measured quality, the CSB data will mostly fill in gaps in bathymetric record or may supersede old/outdated bathymetry for updating our nautical charts (and S-102)

Requests to CSBWG

From US/NOAA:

We request the WG focus on building out DCDB-based analytics dashboard that provides transparency of contribution metrics to help IHO member states, CSB users, and Trusted Nodes make data-driven decisions on supporting the IHO CSB initiative.

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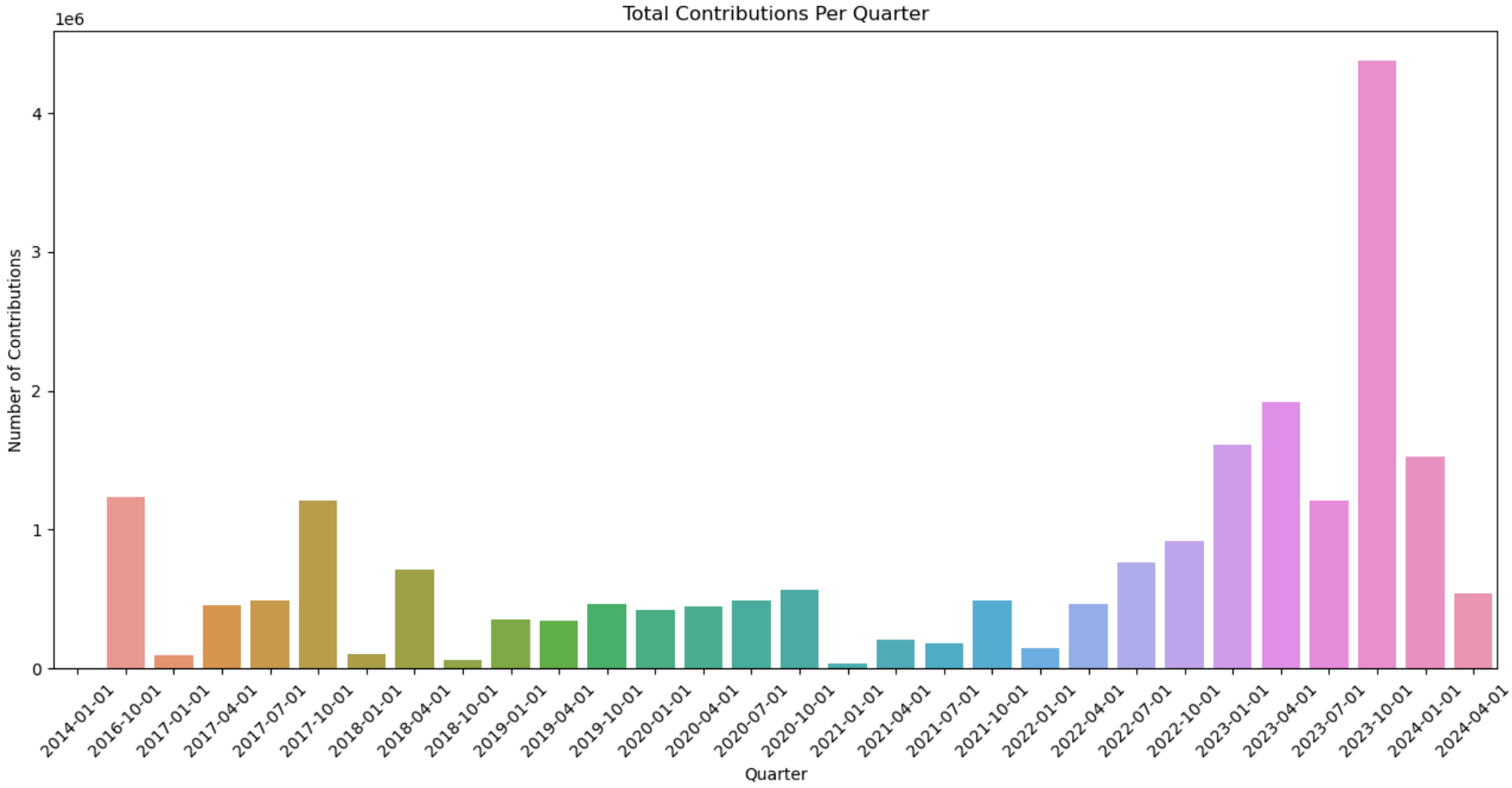
Ideas for dashboard?



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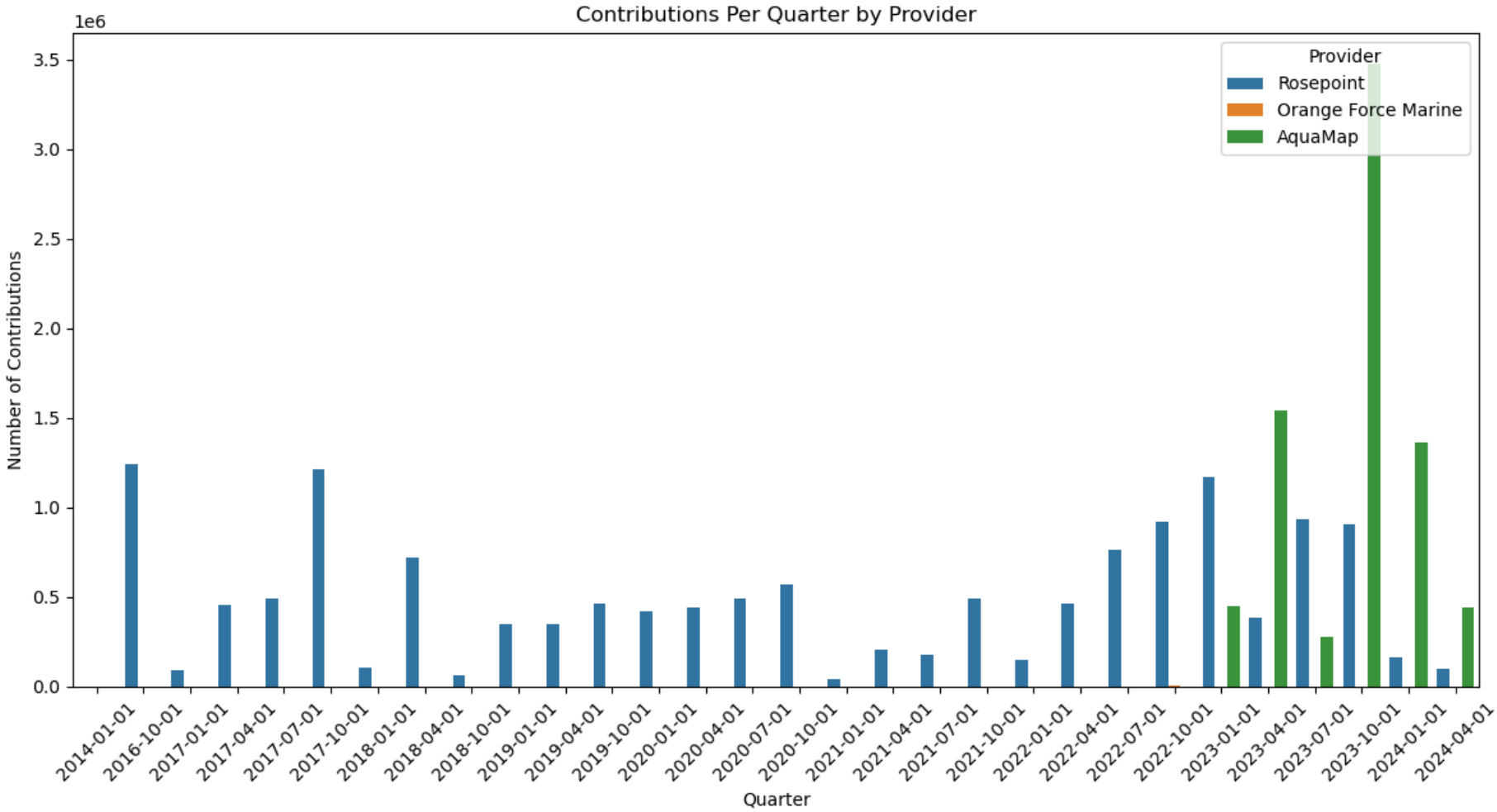

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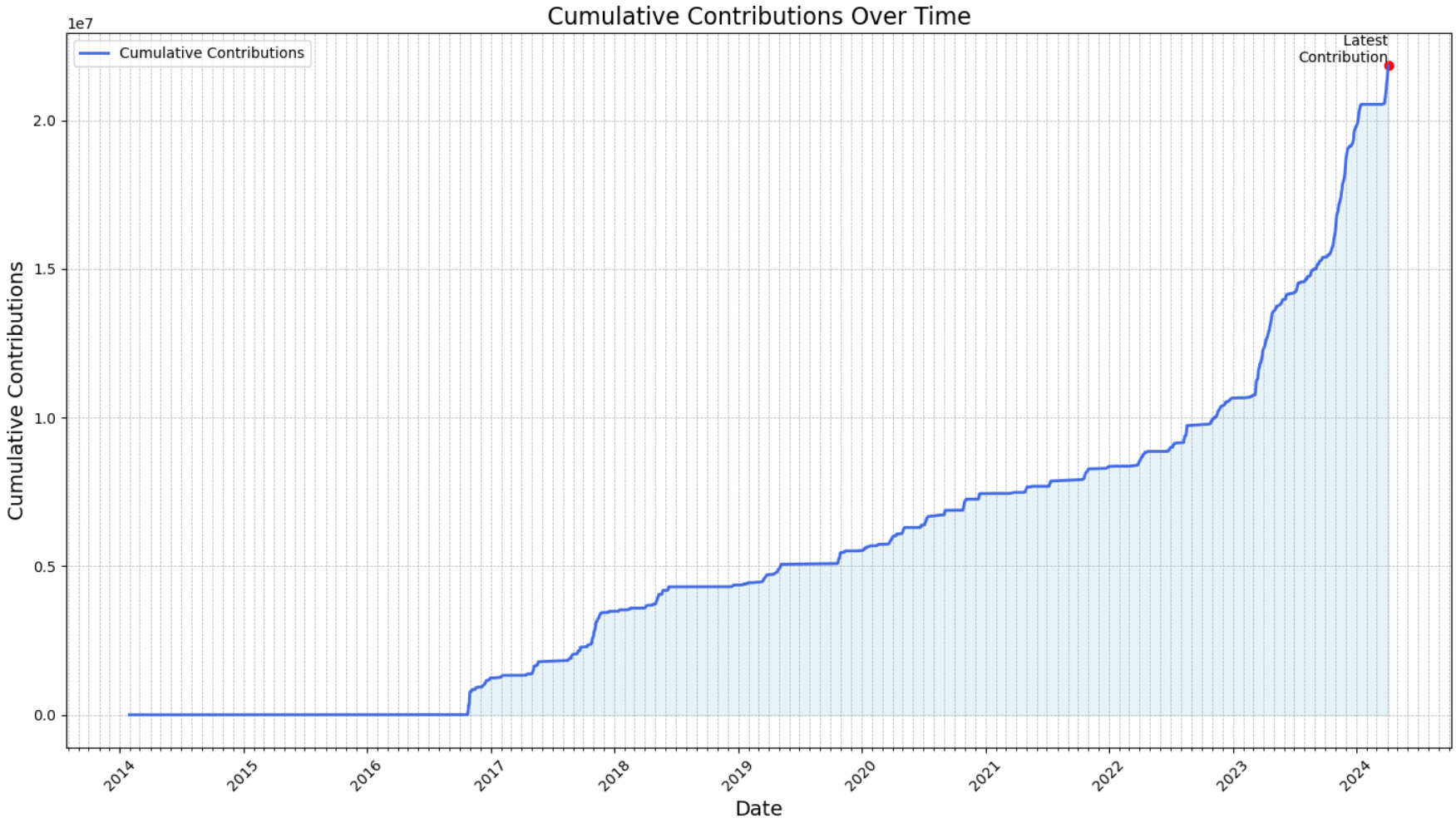

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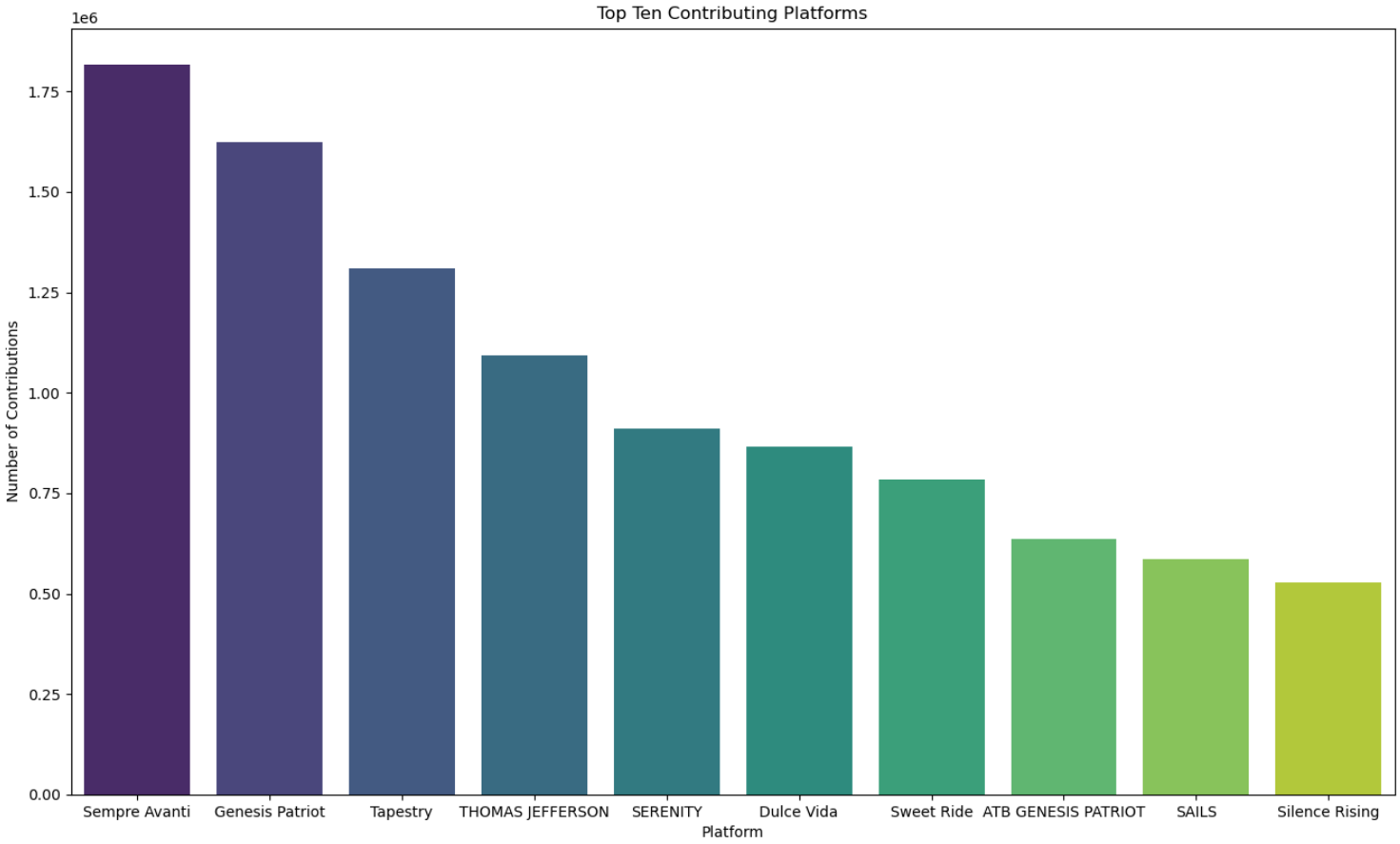

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