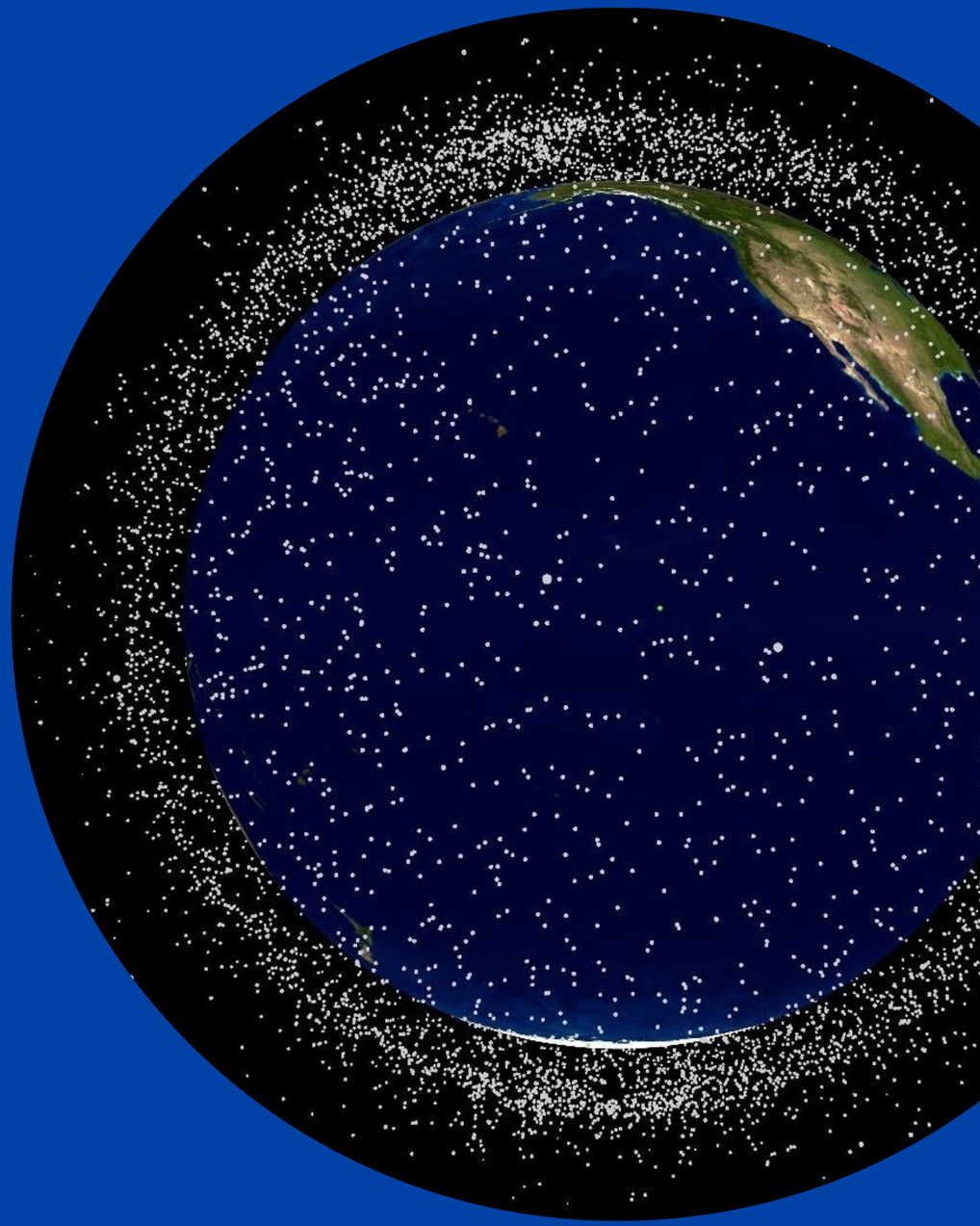
*pictures from actual project

NASA SPACE APPS CHALLENGE

3D-Visualization of space debris and satellites



Presented by Conrad Nick, Jaeger Bob, Kolbenschlag Jens, Rohr Nils, Wendling Luca

03 Oktober 2021

Understanding

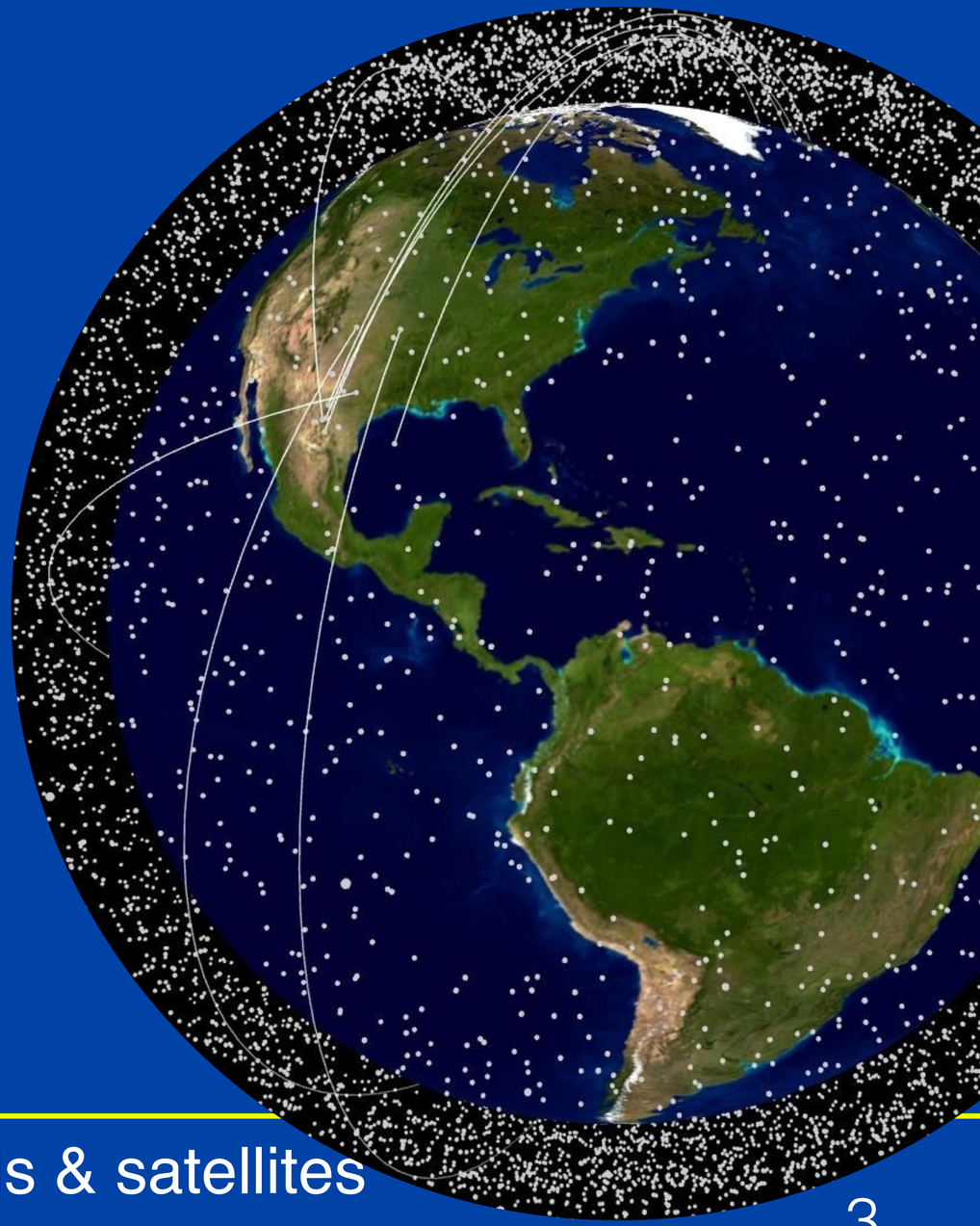
- Development of a open source geospatial application
  - ➡ 3D-Plot of the trash orbit

- Use of real-time data for tracking
  - ➡ Monitoring

*pictures from actual project

Solution

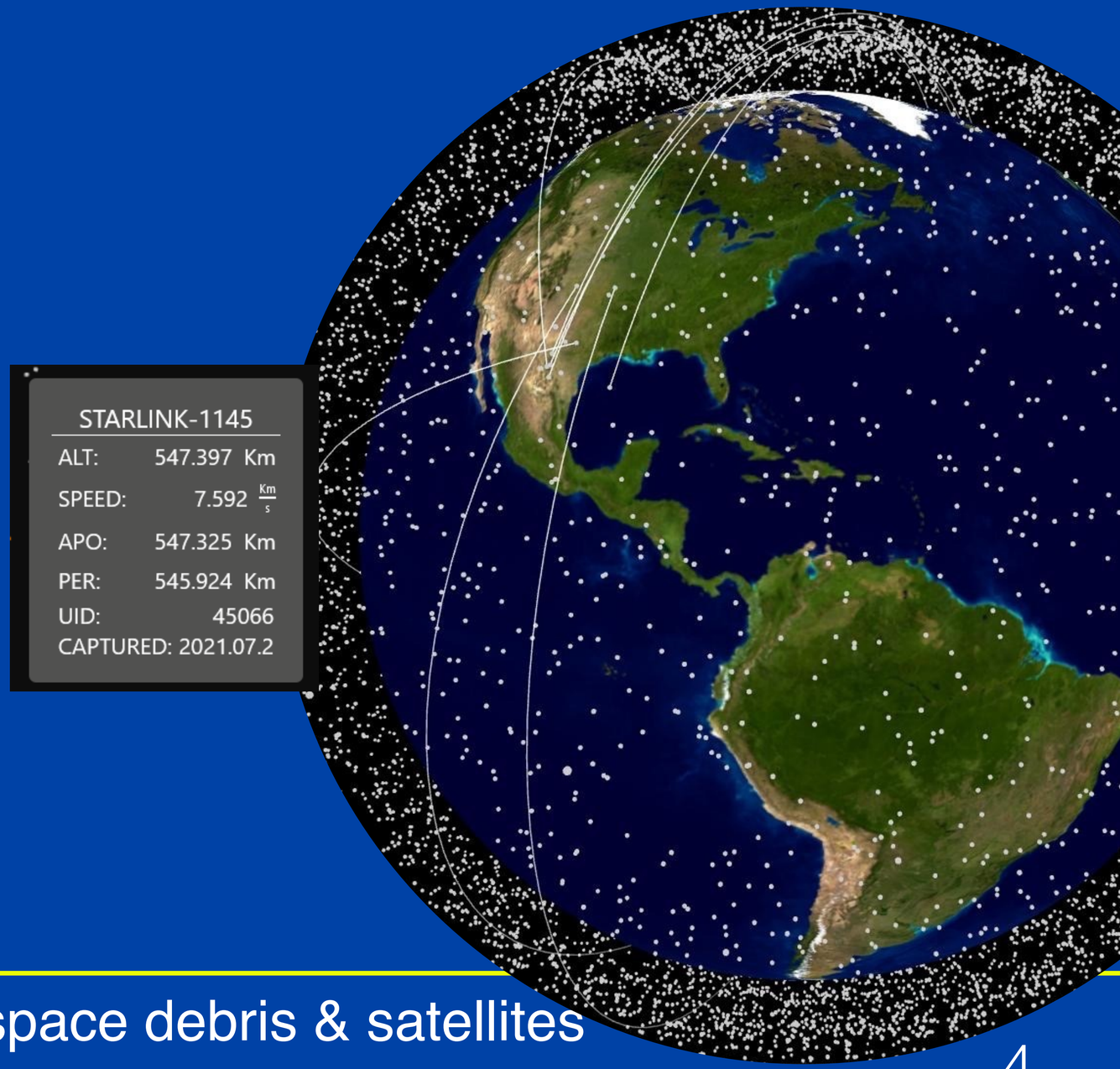
- 3D-Plot
  - ➡ Virtual globe and mapping
- Monitoring
  - ➡ Orbital parameter
- Visualizing
  - ➡ Tracking and collision detection



*pictures from actual project

User interface

- Smooth intuitive interface
- Filigree orbits
- Infopanels
- Future: Filter
- Future: Local View



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Open data used

- space-track.org
  - ➡ Not usable because of license agreement

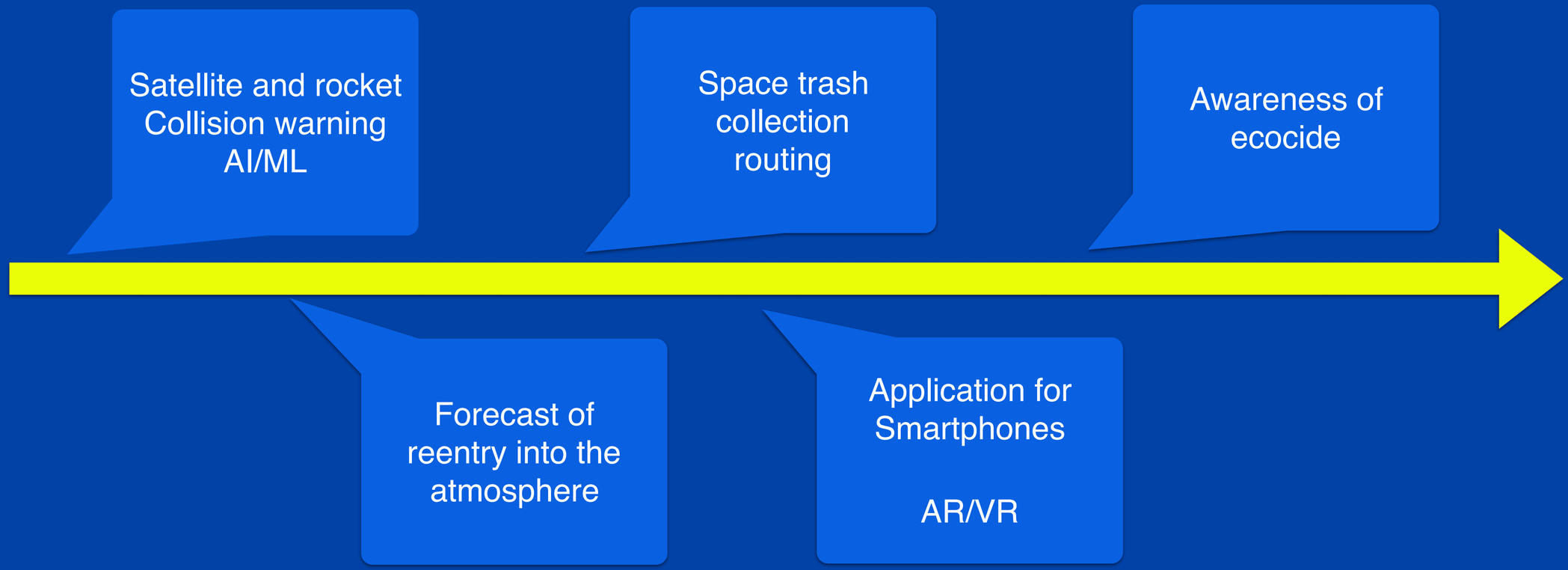
- celestrak.com
  - ➡ Setting up list using API from tle.ivanstanojevic
  - ➡ Setting up list with timestamps

"15": {"@id": "https://tle.ivanstanojevic.me/api/tle/27607", "@type": "TleModel",

"satelliteId": 27607, "name": "SAUDISAT 1C (SO-50)", "date": "2021-10-01T14:57:23+00:00",

"line1": "1 27607U 02058C   21274.62318396 .00000154 00000-0 42487-4 0 9990", "line2": "2 27607 64.5573 13.6713 0053866 349.9006 10.1009 14.75795321 10178"}

Opportunities and vision



Recap

- Fully functional webapp (https://nasahack-ab563.web.app)
- Orbits and Collision warning
- Expandability
- Space trash disposal
- Rise of awareness of ecocide