

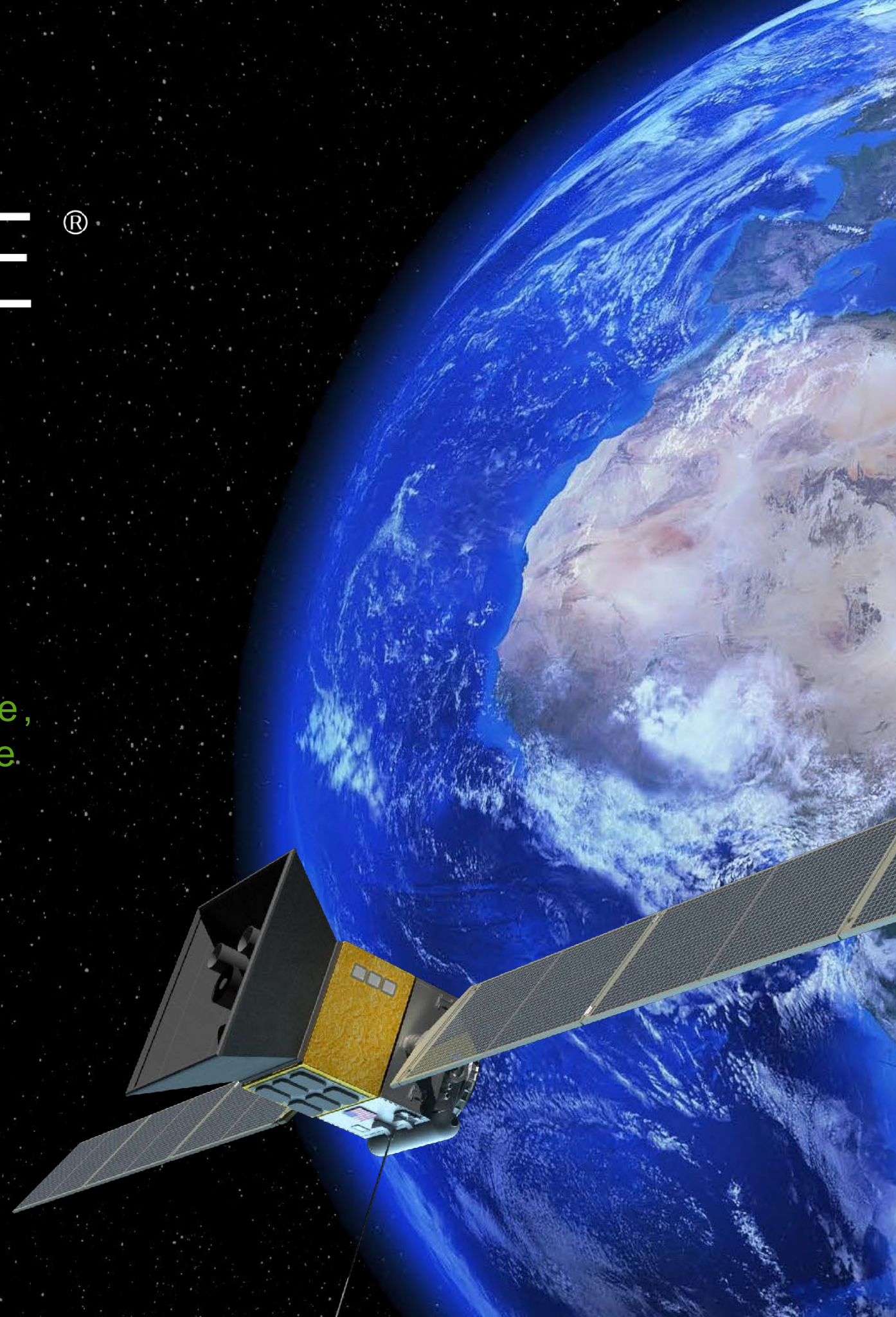
XPLORE®

Major Tom



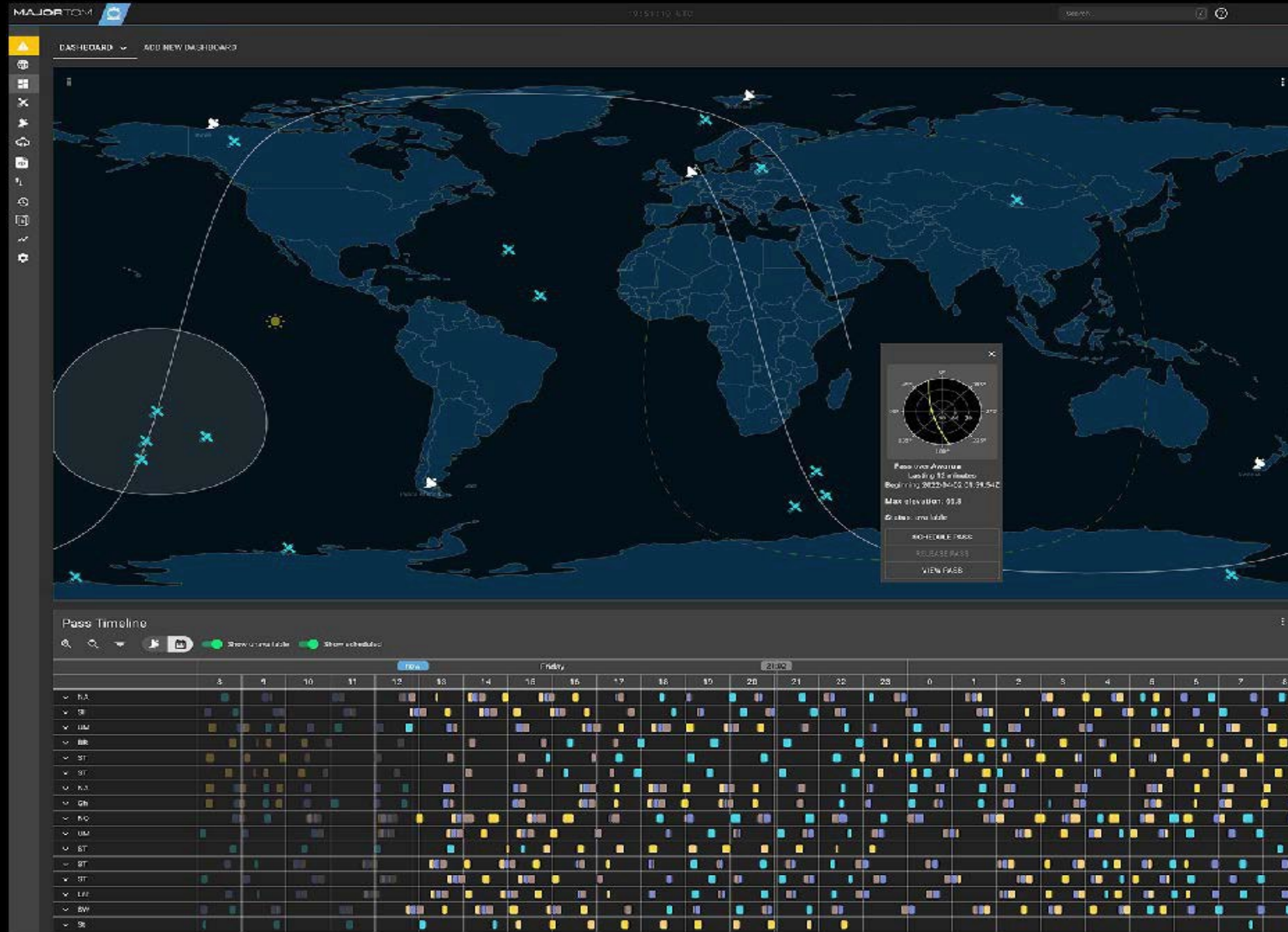
Reducing barriers to entry for space companies through an enterprise-grade, cloud-first satellite operations software.

February 28, 2024
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Xplore Inc.



Major Tom Overview

Operate Satellites from the Cloud: Scale bigger. Deploy faster. Operate smarter.



Command and control satellite constellation from web browser

Integrate seamlessly with most ground station networks

Plan missions and satellite operations

Integrate easily with external applications and services via REST APIs

Quick setup with several customizable configurations and developer sandbox

Pay only for what you use

Complete Mission Control

Major Tom serves as the primary portal to your satellite constellation

Commanding

Sending and queueing commands to the payload or any subsystem in your satellite

File Transfer

Two-way transfer enables software updates, commanding, scripting, and telemetry data dumps

Telemetry

Concise and robust telemetry dashboards to view historical telemetry, with easy-to-use queries

Development

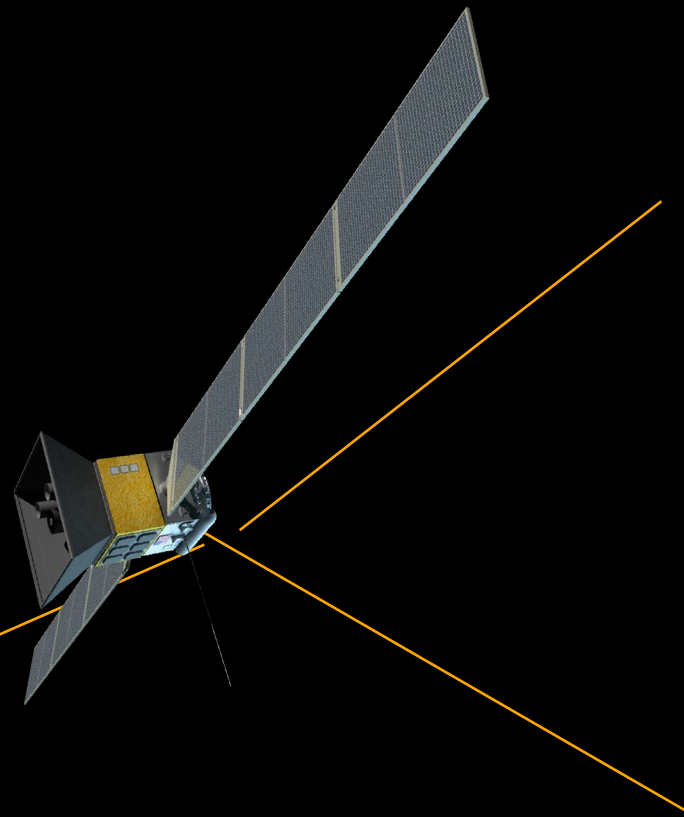
Major Tom can be used for both AIT and the development of the satellite

Integration

Pre-configured to work with COTS ground stations and flight software

Tracking

Multi-satellite ground tracking with orbit path predictions



Scaling Ground Station Connectivity

Major Tom's partners provide access to **129** ground stations

Dramatically lower latency for commanding and downlinking data to the cloud via existing RF communication systems

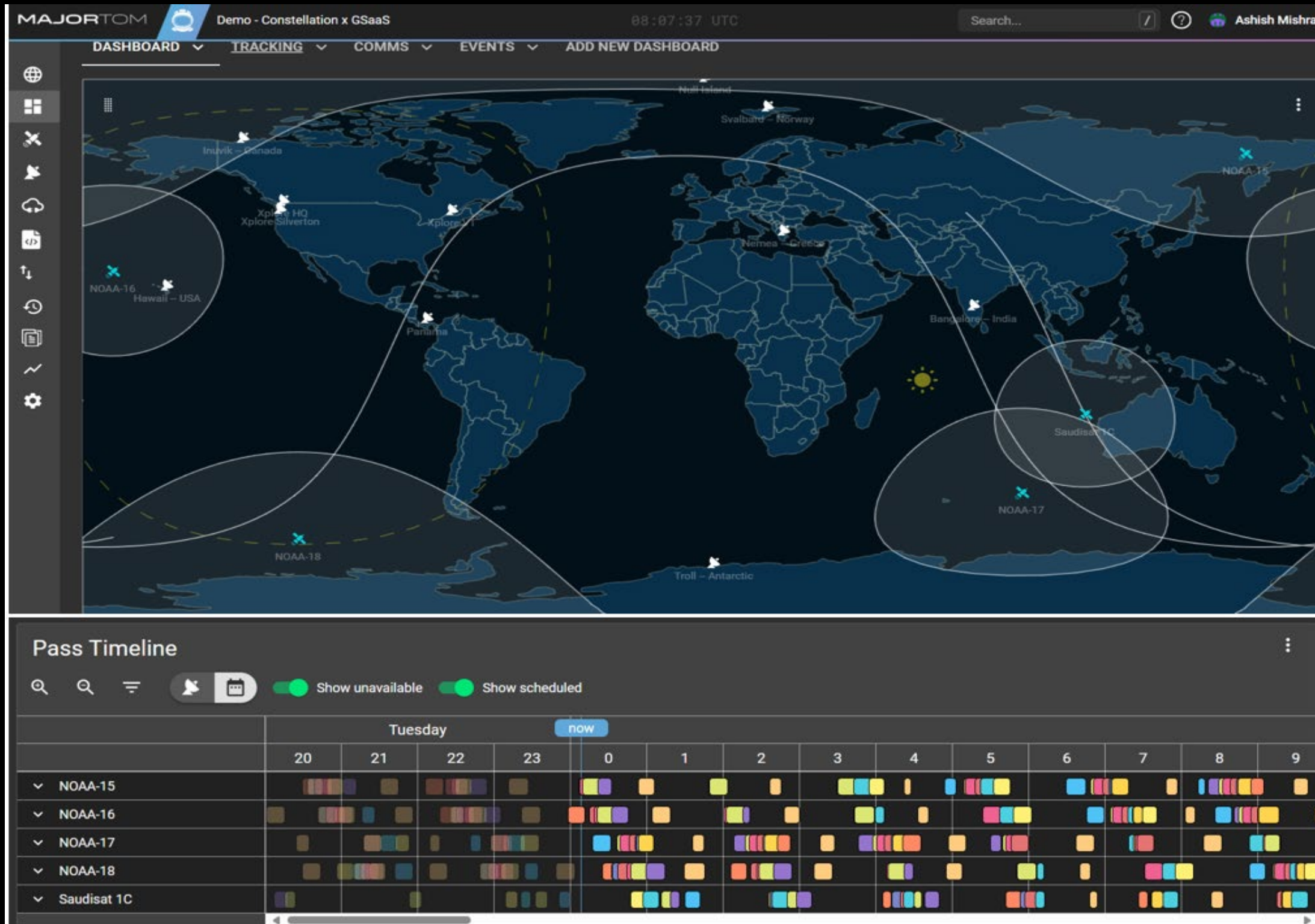
Our objective is to provide our customers with a one-stop shop, agnostic to the ground station provider needed for their mission



Ground Station Networks Supported



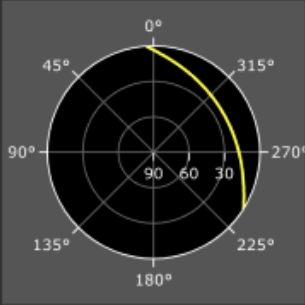
Satellite Tracking and Pass Timelines



Track Every Satellite in Your Constellation and View Their Upcoming Passes to Ground Stations

Ground Station Pass Scheduling

Upcoming Pass ID 2991946:Space Oddity over Xplore X-band Station



Starting in 00:01:32:37

Status: scheduled

Start: 2023-09-25 20:26:04Z

Duration: 14 minutes

Scheduling: RELEASE

Xplore X-band Station

Latitude: 47.2343
Longitude: -119.8526

PREV PASS NEXT PASS

Space Oddity

28654
1 28654U 05018A 23267.41513376 .00000296 00000-0 18243-3 0 9997
2 28654 98.9025 341.2957 0015305 99.3570 260.9334 14.13011862945583

PREV PASS NEXT PASS

Pass Planning for Space Oddity

INSERT COMMAND

E

Establish RF Lock
connect

{ }

↑
DELETE
↓

INSERT COMMAND

P

Ping
ping

{ }

↑
DELETE
↓

INSERT COMMAND

U

Uplink File
uplink_file

{"gateway_download_path":"/schedules/revised/9-23-23.csv"}

↑
DELETE
↓

INSERT COMMAND

U

Update File List
update_file_list

{ }

↑
DELETE
↓

+ ADD COMMAND

Pass Scheduling Allows Operators to Automate Pass Activities Hours or Days in Advance

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6

No Export Control Information

XPLORE

Commanding via Major Tom Interface


MAJORTOM





Demo - Constellation x GSaaS


08:47:27 UTC












Search...





 Ashish Mishra





DASHBOARD



































TRACKING

COMMS

EVENTS

ADD NEW DASHBOARD

Communications

1167829	Safemode Command	QUEUED	35 minutes ago	NOAA-18	Gateway 1					
1167828	Downlink File	QUEUED	35 minutes ago	NOAA-18	Gateway 1					
1167827	6. Update File List	QUEUED	35 minutes ago	NOAA-18	Gateway 1					
1167826	5. Error Command	QUEUED	35 minutes ago	NOAA-18	Gateway 1					
1167825	1. Ping	QUEUED	35 minutes ago	NOAA-18	Gateway 1					
1107775	6. Update File List	QUEUED	2 months ago	AQUA	Gateway 1					
1107774	Downlink File	WAITING	2 months ago	AQUA	Gateway 1					

All Your Commands and Their Status in One Place

Granular Teams and Roles Definition

← ↻ 🔒 https://app.majortom.cloud/settings/team/roles

MAJORTOM 08:41:15 UTC Search... / ? Ashish Mishra

- General Settings
- Users
- Roles

Update Role

Name *
Operator 9

- ☐ add users to the team
- ☐ edit users' emails and change their passwords
- ☐ remove users from the team
- ☒ create missions
- ☐ delete missions
- ☒ rename the team
- ☐ show all missions
- ☐ create/edit/delete gateways
- ☐ create/edit/delete scripts
- ☐ create/edit/delete command definitions
- ☐ queue/execute/cancel commands

☐ All Tags ☐ Untagged Only

ALLOW SELECTED TAGS

CANCEL UPDATE ROLE

Easy Setup to Create Custom Roles and Permissions for Your Team

Real-Time and Historical Telemetry Data Visualization



Dedicated Grafana Integration for Timely Interpretation of Real-Time and Historical Telemetry Data

Robust Scripting APIs

The image is a composite of three screenshots illustrating the Major Tom scripting environment.

Left Screenshot: Major Tom Script Settings
The browser shows the URL `app.majortom.cloud/missions/15/scripts/12/settings`. The page title is "MAJORTOM". The script name is "Pass Management". The authentication token is `b81e7ea9a004ac2cc292f62ef207f8e7d2a9264e3d03c2c120e983e8b2c7e86c`. There are buttons for "COPY TO CLIPBOARD" and "REGENERATE TOKEN". Below the token, it says "This Script is enabled." with a "DISABLE" button. At the bottom, there is a "Scripting API Documentation" section with an "INTRODUCTION" and a "GRAPHQL PLAYGROUND" button.

Right Screenshot: GraphQL Playground
The browser shows the URL `app.majortom.cloud/missions/15/scripts/109/playground`. The playground is titled "QueueAndExecute". It shows a GraphQL query: `mutation QueueAndExecute($systemId: ID!) { queueAndExecuteCommand(input: { systemId: $systemId }) { id state } }`. There is a "DOCs" sidebar on the right with a search bar and a list of queries: "agent: Agent!", "bucket(...): Bucket", "command(...): Command", and "commandDefinition(...)".

Bottom Screenshot: Code Editor
The code editor shows two files: `automate-pass.js` and `automate_pass.py`. The `automate-pass.js` file contains the following code:

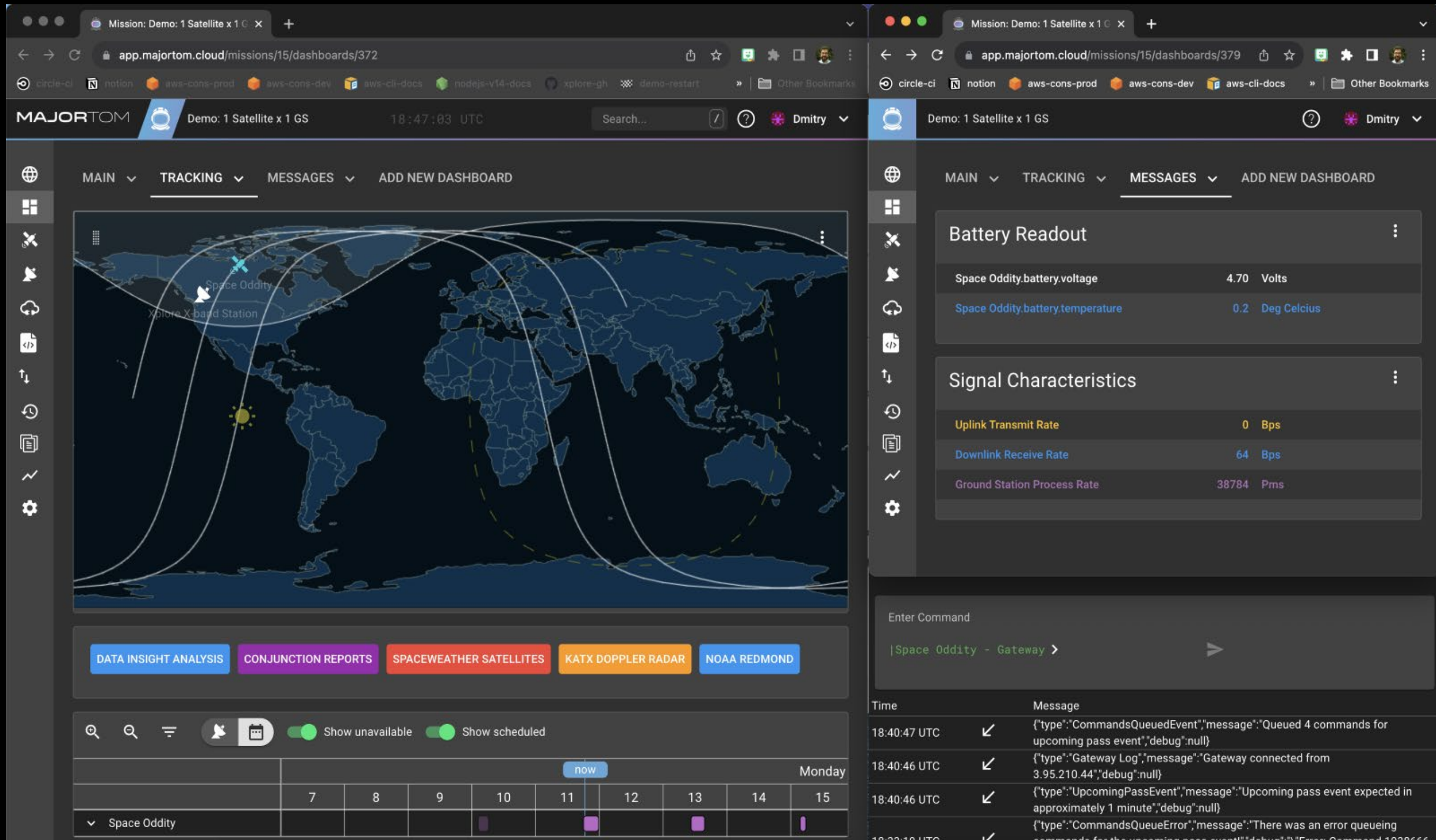
```
1 const script = mts(process.env.SCRIPT_PARAMS);  
2  
3 async function performAutomatedPass() {  
4   const gateway = await script.getGateway({ id: 22 });  
5   const satellite = await script.getSatellite({ id: 294 });  
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The `automate_pass.py` file contains the following code:

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```

GraphQL Scripting APIs Allow for Custom Automation of Complex Constellations

Configurable Mission Dashboards



Oversee and Interact with the Mission in the Way You are Most Comfortable

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Ground Station Networks Supported



Customer Benefits

1 Cloud Native

- Deploy Faster
- Improve Security
- Extend via APIs
- Reliable

2 Lower Cost

- No OpEX cost of maintaining ground antennas and servers
- No need to build or maintain your own special purpose mission control software
- Multiple Pricing Options

3 Flexible

- Size Agnostic
- Payload Agnostic
- Communication protocol agnostic
- Multi-language open- source libraries
- Works with Cutting-Edge or Legacy satellites
- Cloud agnostic

4 Low Lead Time

- Launch sooner: operators can immediately access Major Tom
- Easy to test with most flatsats
- Customizable commanding APIs
- Pre-integrated Ground Station network



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