

National Aeronautics and
Space Administration

EARTHDATA

Federated Authentication & Authorization

WGISS-61 03/16 - 20/2026

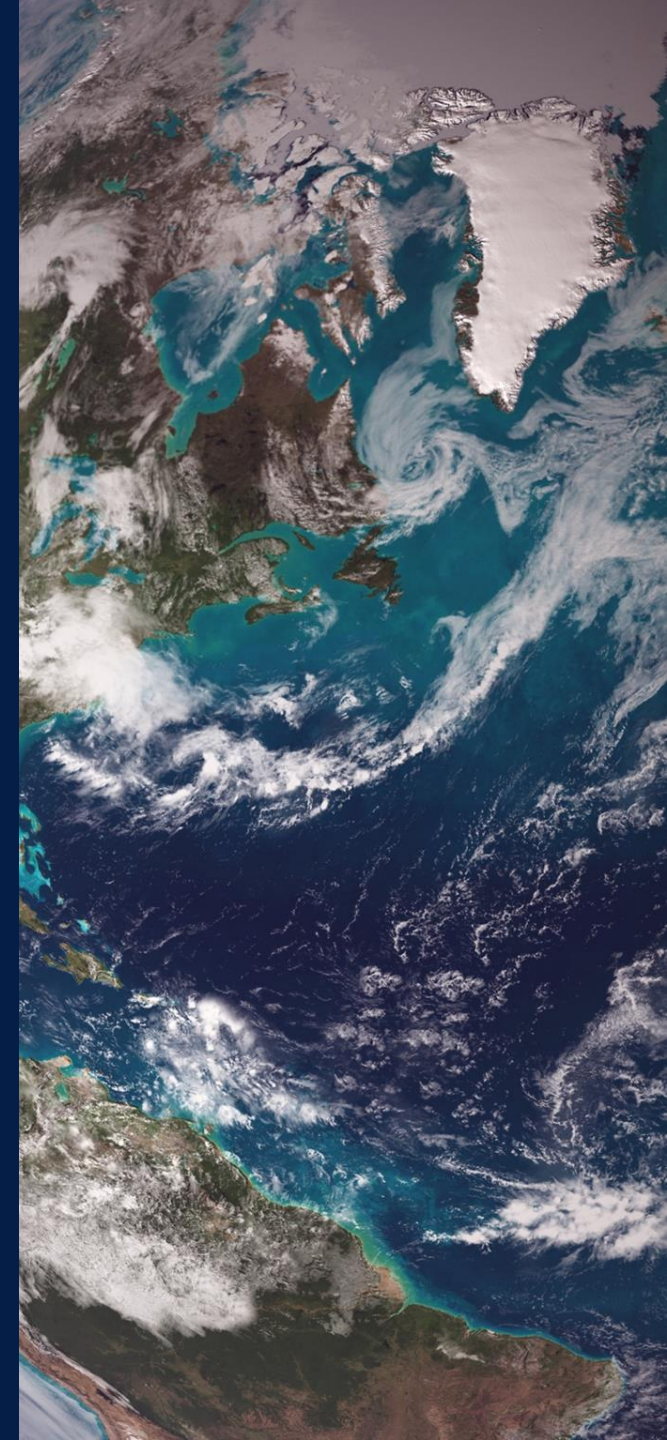
Doug Newman

NASA Goddard Space Flight Center, ESDIS Project



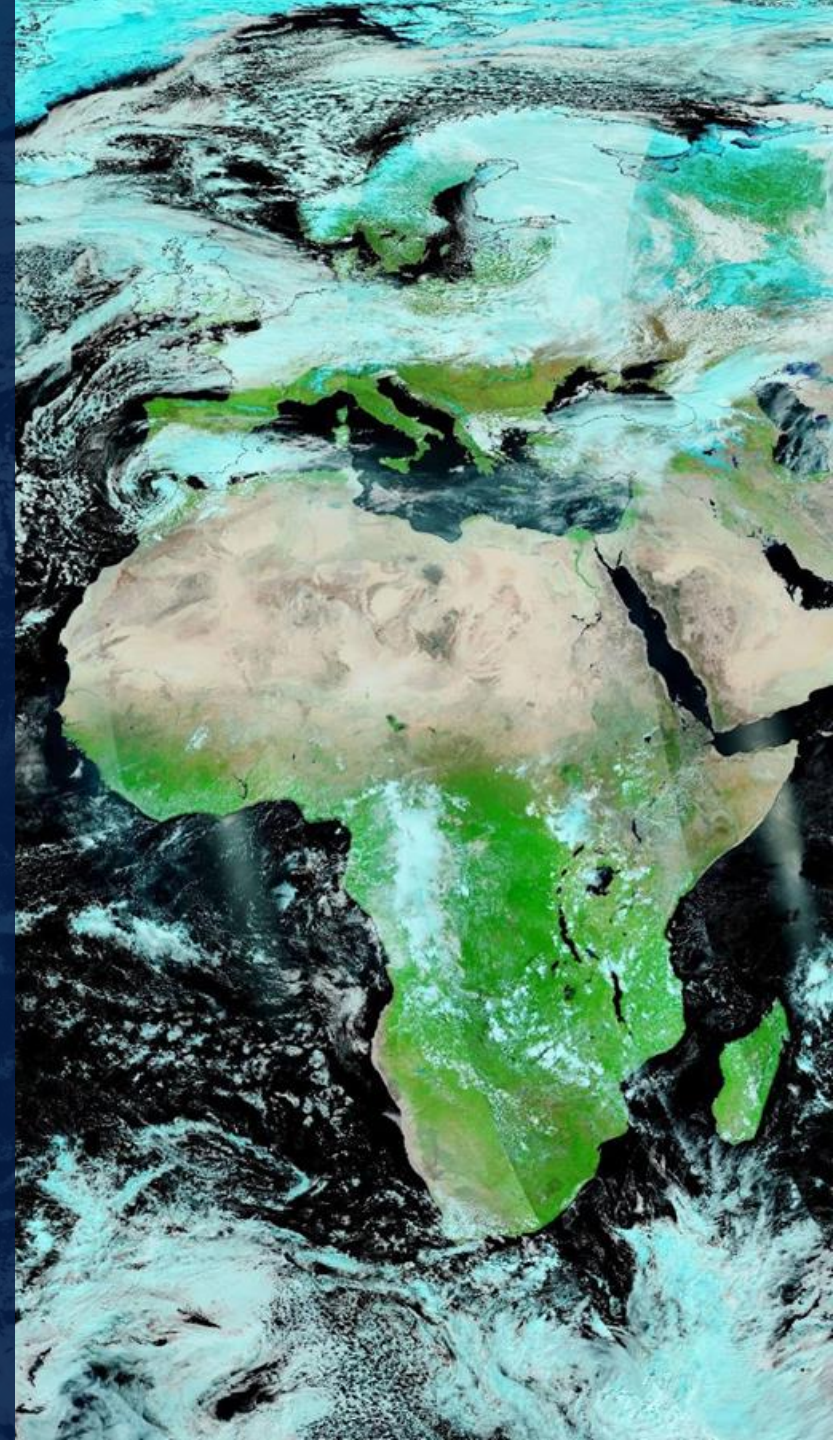
Agenda

- Holistic Identity Management
- Architecture & Implementation
- ESA as an identity provider
- Roadmap



Holistic Identity Management

Federating Identity Management



For data consumers - less friction

- The ability to use existing credentials (social login, for example) to access NASA earthdata data and services
- The ability to use more secure authentication (NASA Launchpad, for example) for all NASA earthdata data and services



For data producers - better management

- Non-US Agency data providers (members of CEOS, for example) will be able to manage their metadata in NASA CMR



For NASA - less risk, more opportunities

- Eliminate the need to manage credentials
- Increase data use by easing authentication and authorization across multiple systems
- Improve security posture
- Multi-factor authentication where needed
- Scalability

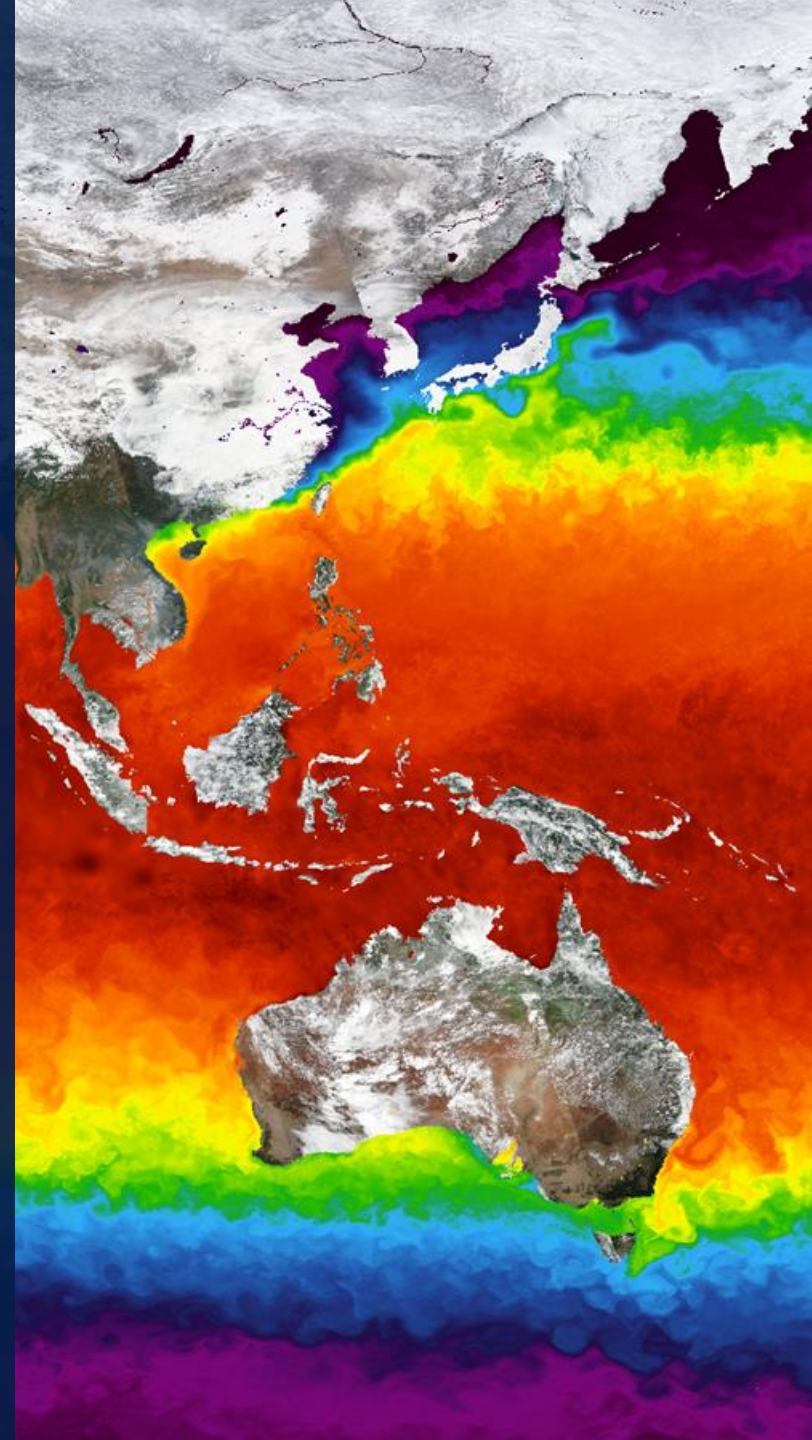


Federated authentication

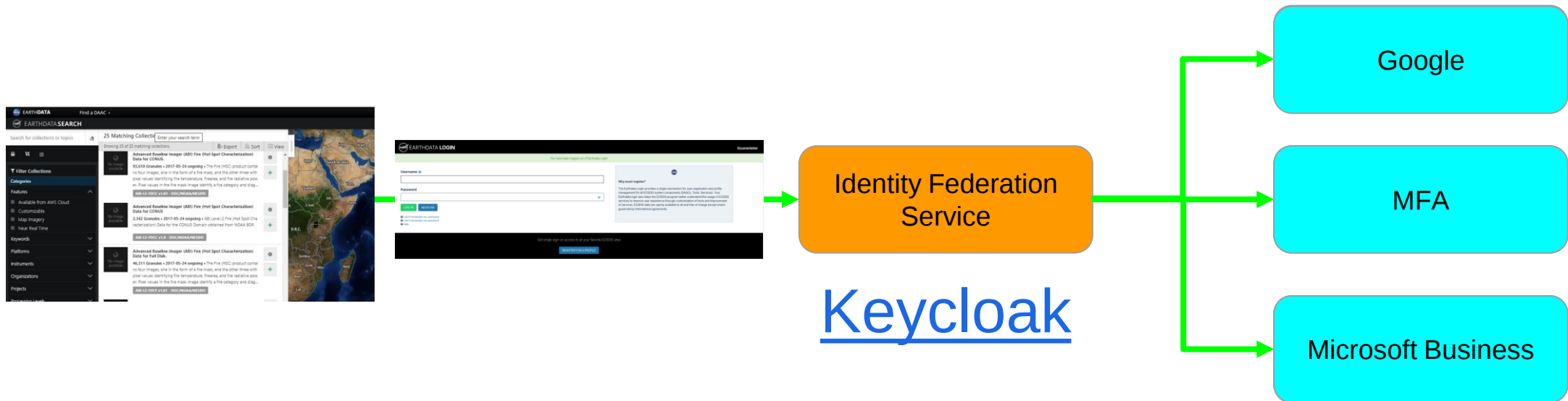
- A user can use their social login credentials to access NASA data
- A user *could* use their social login credentials to access non-NASA data
- **Does that decrease friction for users acquiring data from multiple agencies?**



Architecture & Implementation



Minimum Viable Product Architecture



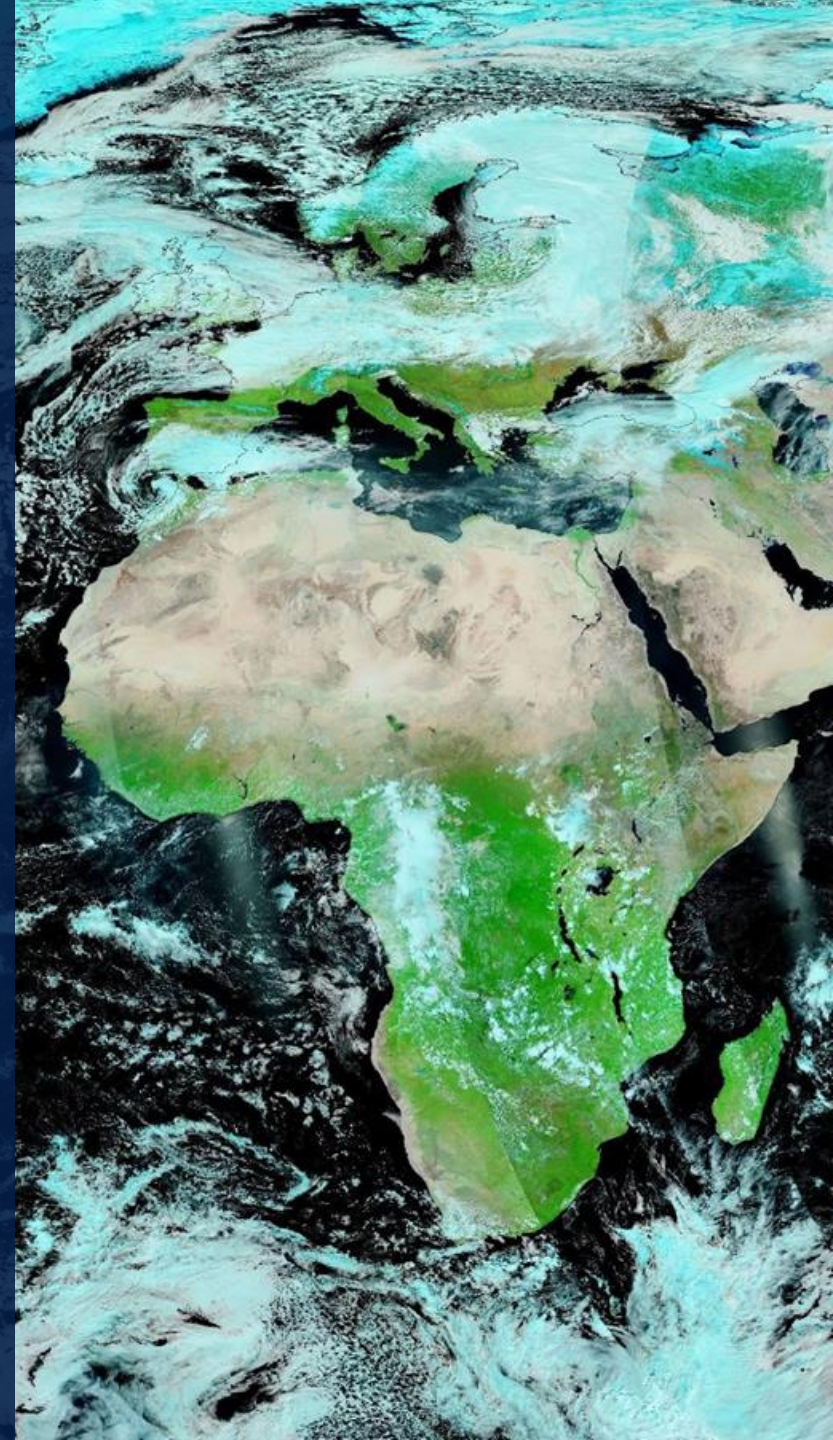
Keycloak

The backbone of our architecture is [Keycloak](#) technology that provides,

- Single sign-on
- Identity Brokering
- Social Login
- User Federation



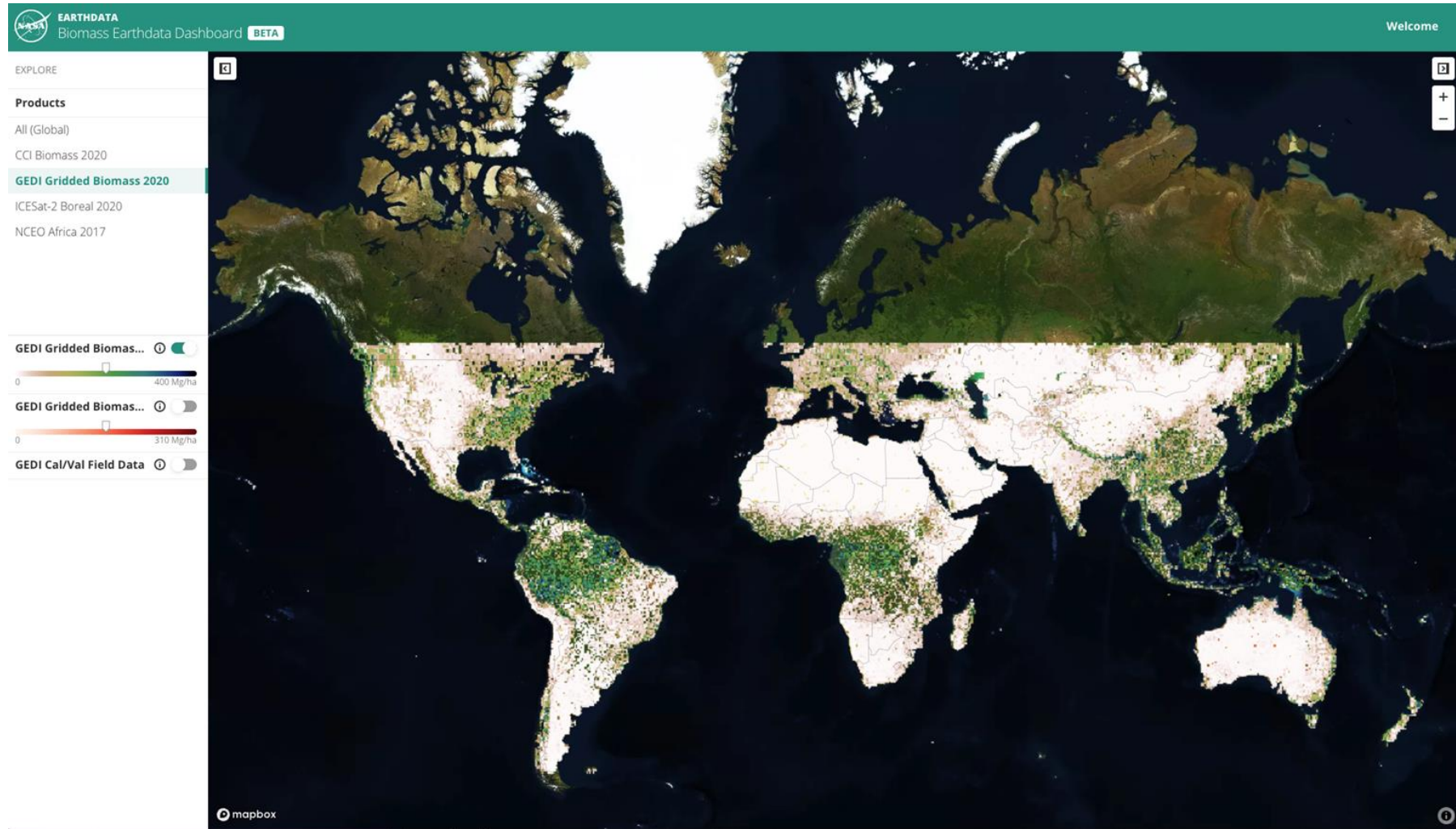
ESA as an identity provider

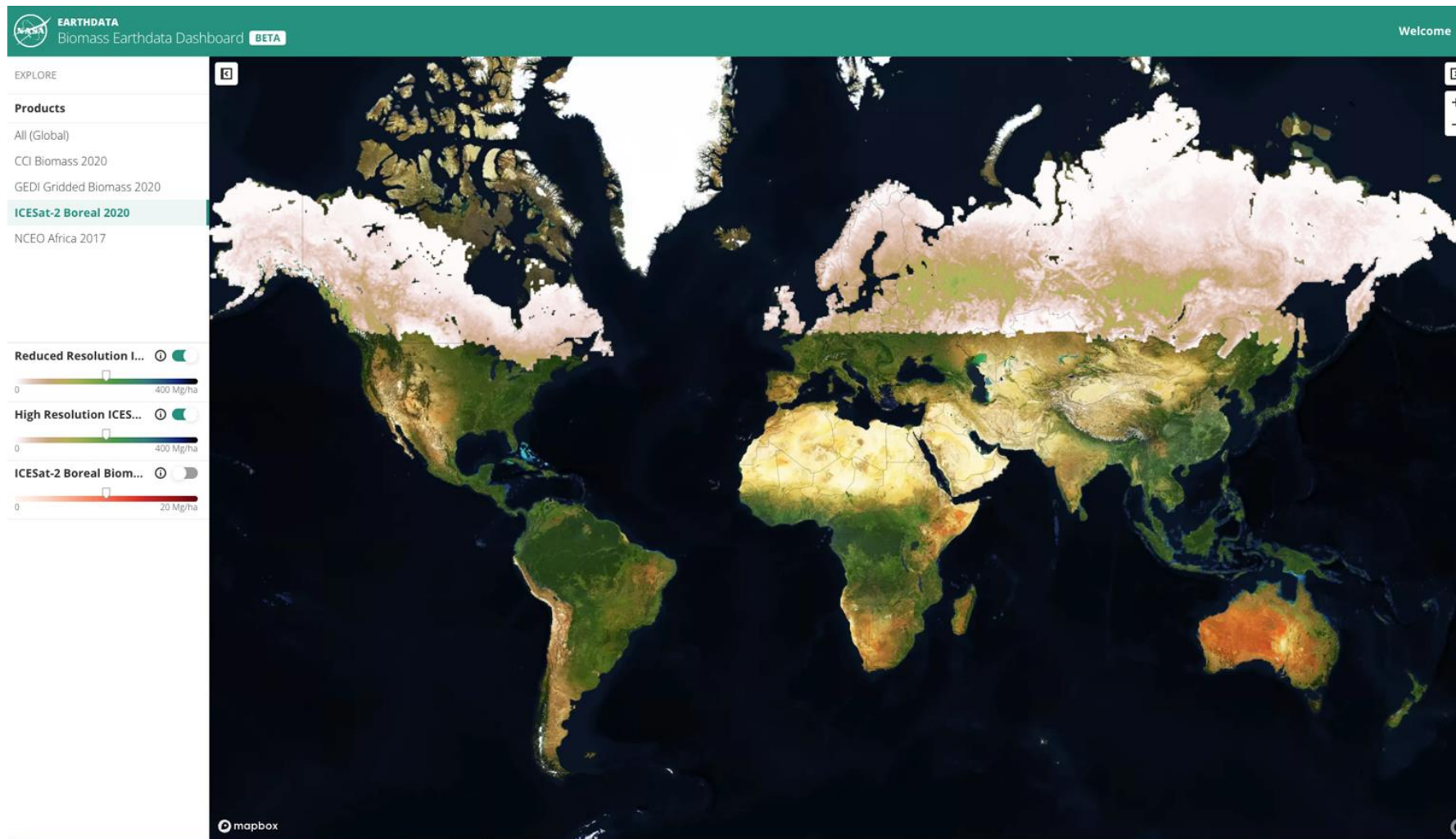


The MAAP project

The Multi-Mission Algorithm and Analysis Platform ([MAAP](#)) is a joint effort between NASA and **ESA** (European Space Agency) designed to support collaborative research. MAAP brings together relevant data, algorithms, and computing capabilities in a common cloud environment to address the challenges of sharing and processing data from field, airborne, and satellite measurements related to NASA, ESA, and **other space agency missions**.







The MAAP need

ESA users of the MAAP project currently have to use NASA ESDIS (Earthdata Login - EDL) credentials to access NASA data. This means creating an account in EDL and using it to access data. It also means switching credentials between NASA and ESA depending on which data they are accessing.

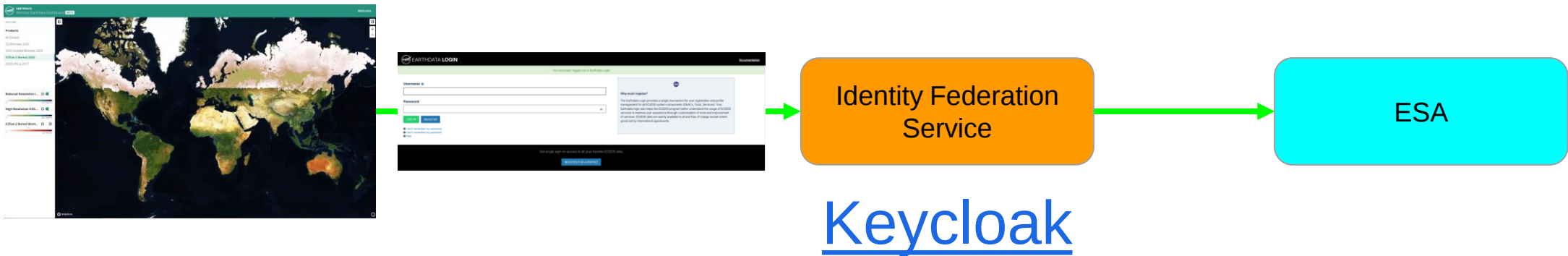


The solution we will provide for MAAP

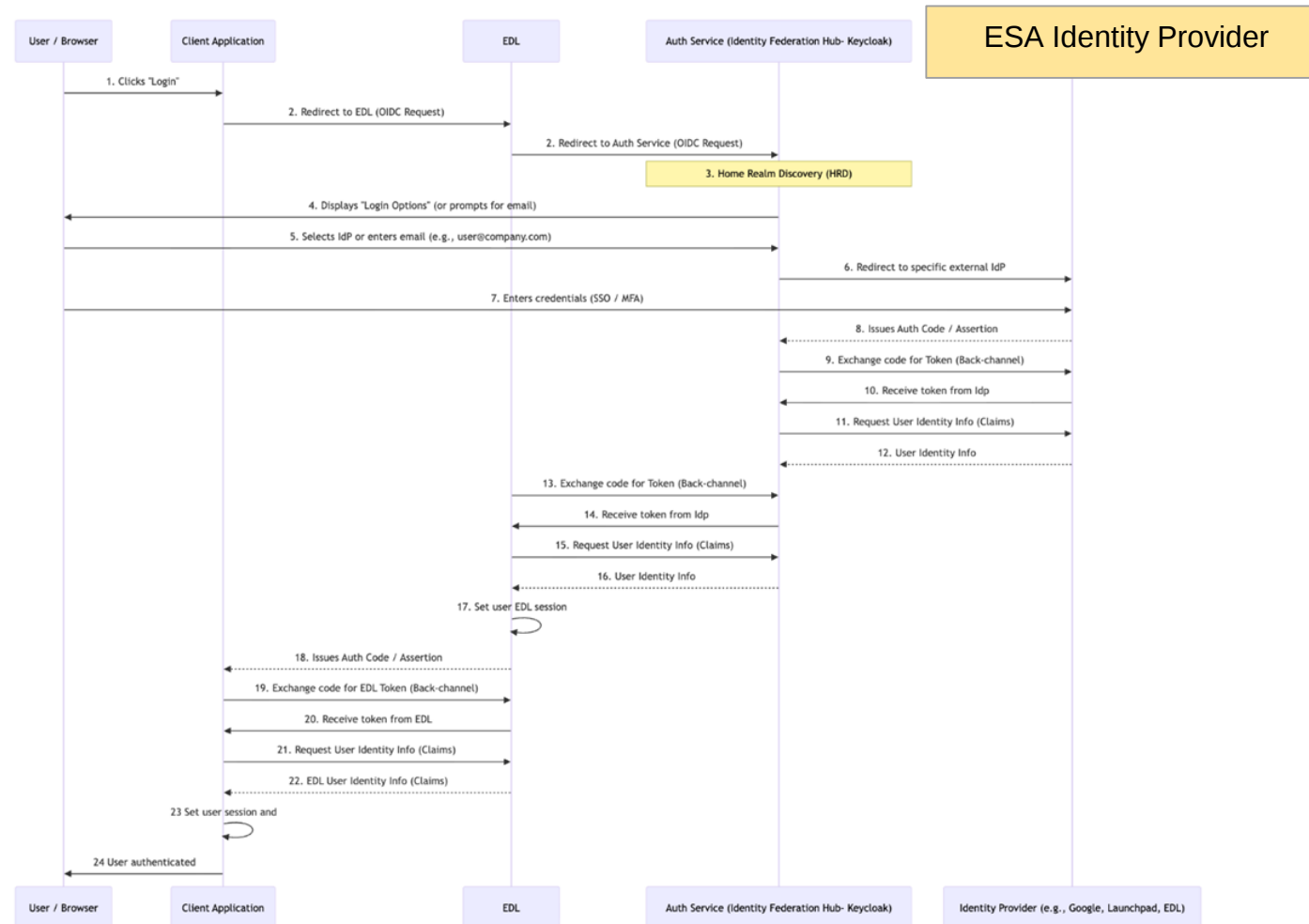
NASA ESDIS' Holistic Identity Management system allows NASA to add third-party identity managers. We will add ESA's identity manager to our system allowing ESA users of MAAP to access data from both NASA and ESA while maintaining only one set of credentials.



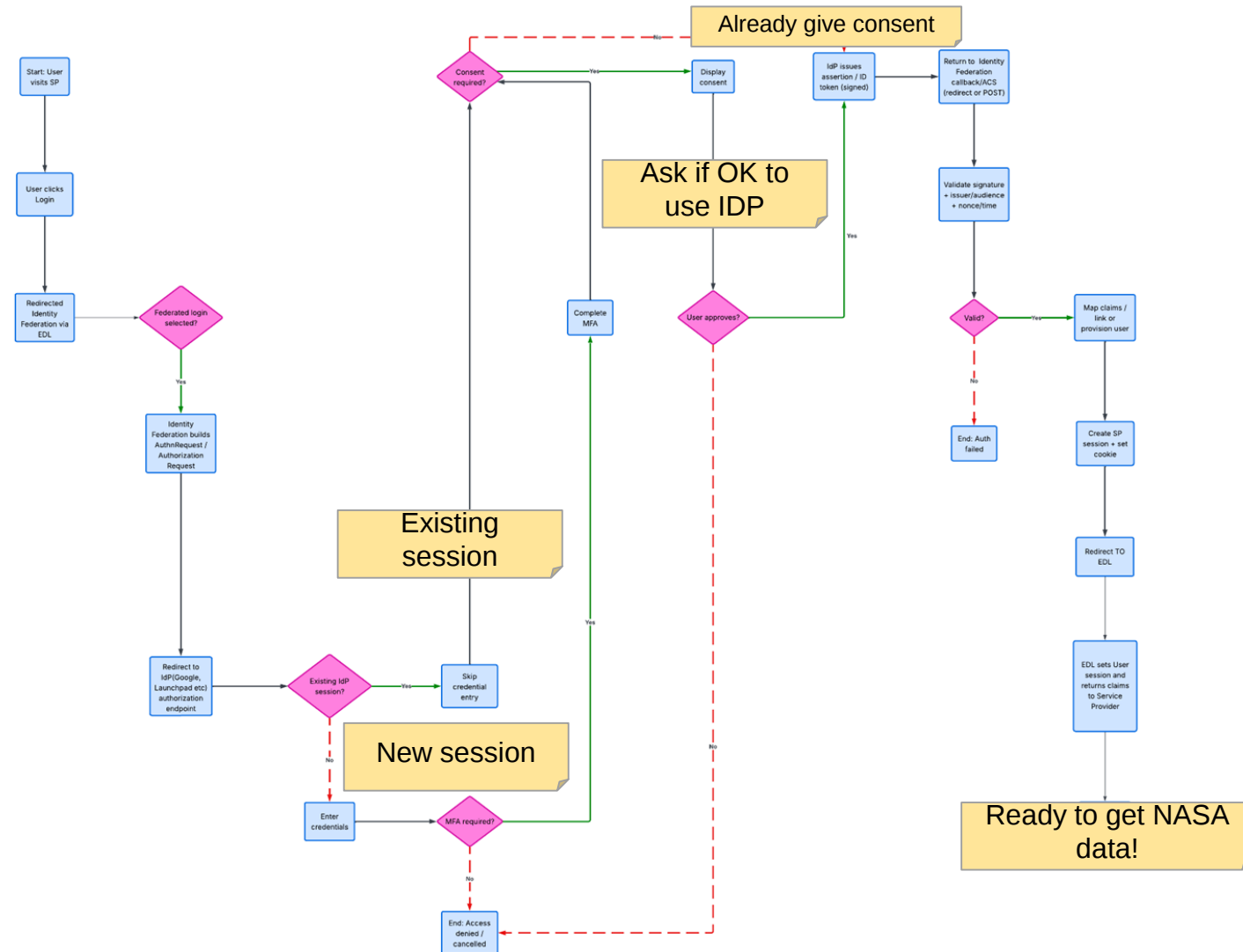
In diagram form



The ESA user experience



The ESA user experience

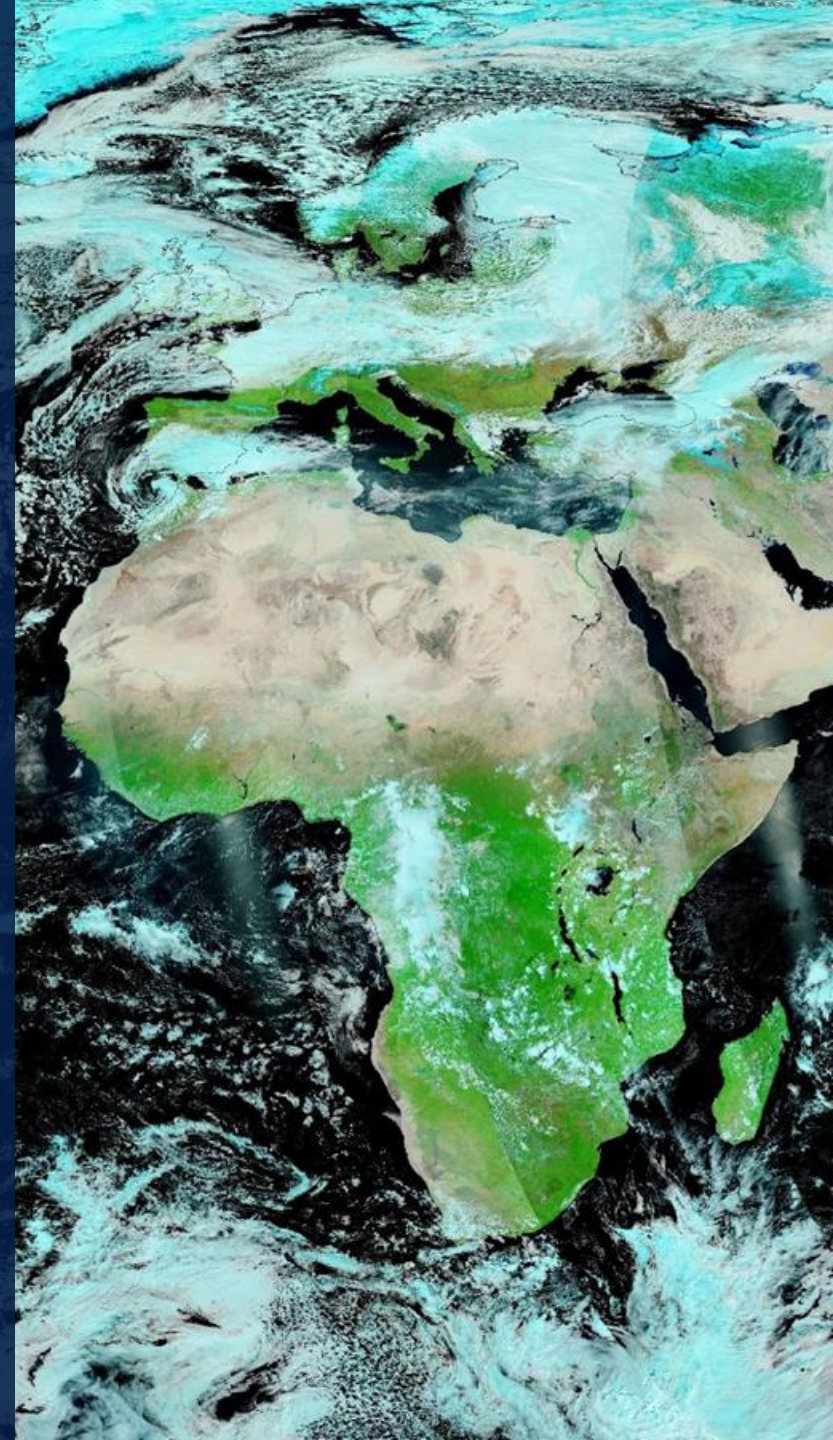


How this solution may guide WGISS

This may pave the way for other agencies to add their identity providers to NASA ESDIS. Giving the same user experience to their users that ESA MAAP users will enjoy



Roadmap



Minimum Viable Product

Functionality:

- Allow Google and NASA Launchpad for authentication.
- Applications can specify what identity providers are allowed for their application.
For example, apps allowing access to sensitive information would allow NASA Launchpad MFA only

Delivery date: **Quarter 1 of 2026**



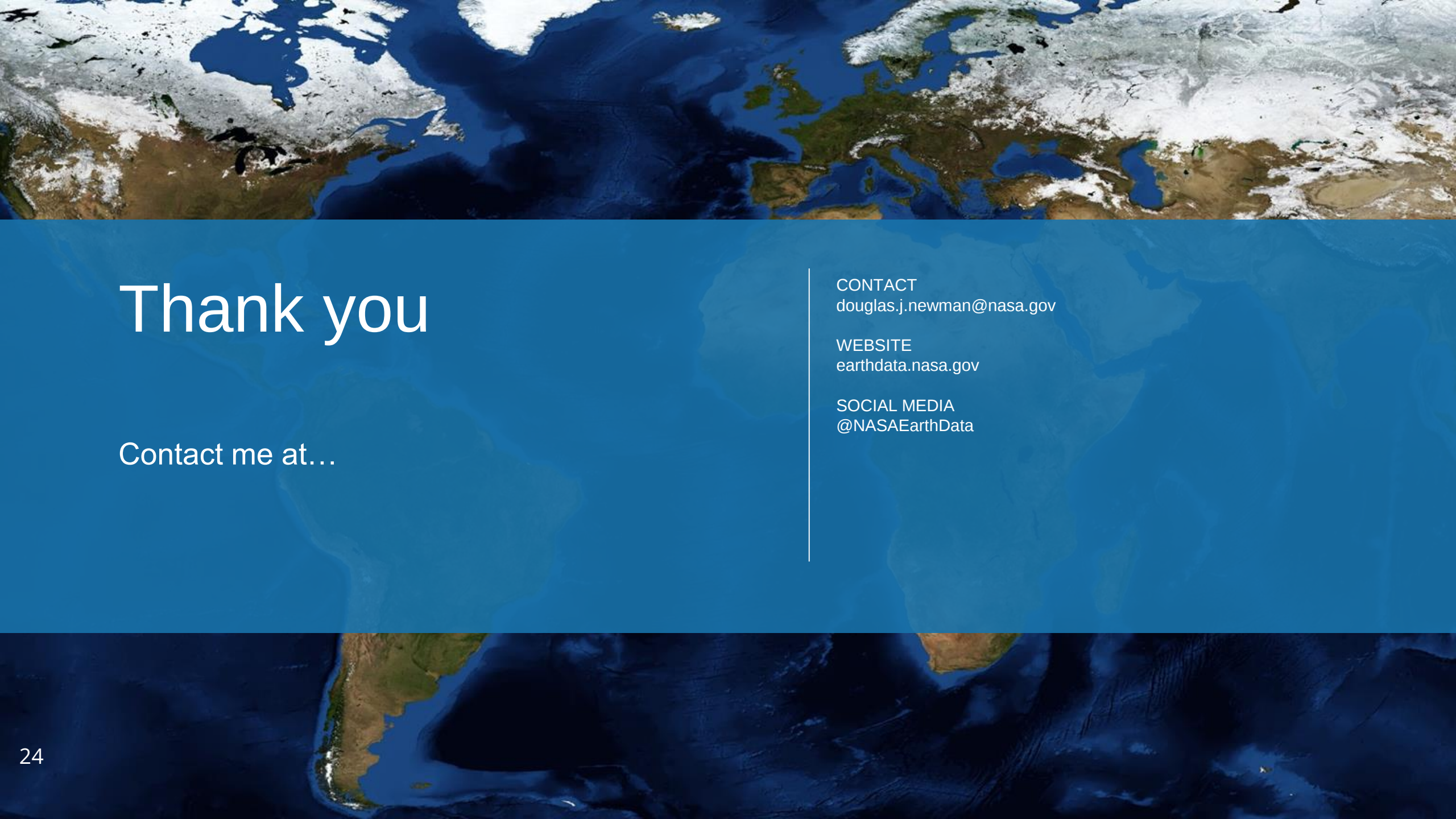
Roadmap

Q1 2026 - MMT access via MFA (retirement of dMMT)

Q1 2026 - Additional social logins (Facebook, Microsoft)

Q2 2026 - ESA identity provider for Earth Data Login





Thank you

Contact me at...

CONTACT
douglas.j.newman@nasa.gov

WEBSITE
earthdata.nasa.gov

SOCIAL MEDIA
[@NASAEarthData](https://twitter.com/NASAEarthData)