Fortifying climate resilience by increasing security for CReDo
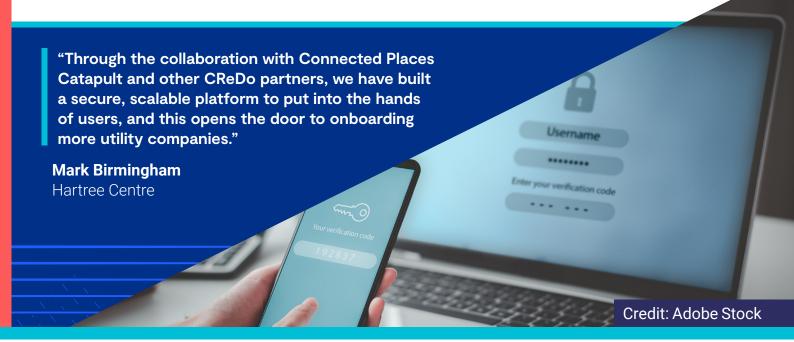
STFC Hartree® Centre worked as part of the Climate Resilience Demonstrator (CReDo) project, an initiative aiming to enhance UK utility infrastructure resilience to climate change, to optimise security for users, developers, and future collaborators.

Challenge

The Climate Resilience Demonstrator (CReDo) project harnesses data over multiple operational boundaries to develop a digital twin of UK utility infrastructure. CReDo serves as a predictive tool, assessing the risk of infrastructure failure during extreme weather events. This guides utility providers in enhancing their resilience to climate change. The platform is a multi-partner project, hosting key infrastructure data from the telecommunications, water, and power sectors. Hosting multiple utility providers allows integration of data from different sources, enabling CReDo to assess cross-infrastructure impacts. As more utility providers join the platform, there is an increasing need for improved security, to ensure sensitive data is protected from unauthorised access.

Approach

To appropriately adhere to the cybersecurity requirements of different utility companies, a secure access system needed to be implemented into the platform. Working with Connected Places Catapult and STFC Scientific Computing's Data & Analytics Facility for National Infrastructure, the Hartree Centre team developed proxy software and set up an authenticator service to achieve this. These security measures ensure that each asset owner can securely access the appropriate data visualisations and cross-infrastructure impacts on CReDo through a browser.

> "Through the collaboration with Connected Places Catapult and other CReDo partners, we have built a secure, scalable platform to put into the hands of users, and this opens the door to onboarding more utility companies."

Mark Birmingham
Hartree Centre

Credit: Adobe Stock

Benefits

Enhancing the security of CReDo significantly reduces the risk of unauthorised access, enabling existing utility providers to feel confident in the protection of their data when contributing to the CReDo platform. Creating integrated security measures accessible through browsers also means utility providers do not need to install security software on company laptops that may violate internal policies. This creates a smooth onboarding process, allowing more utility providers to engage with and access the platform to increase the UK's resilience to climate change.

At a glance

- Fortified defence through new security measures, blocking unauthorised access.

- Bolstered confidence for utility providers to contribute data, due to reinforced platform security.

- Creating a solution to satisy the security needs of present and future utility providers.

- Smoother access and tightened security, meaning more utility providers can contribute to and use the platform securely.

Who we are

The Hartree Centre was created by UK Government to help businesses and public sector organisations accelerate the adoption of high performance computing (HPC), big data analytics, artificial intelligence (AI) and quantum technologies. We play a key role in realising UK Government's Industrial Strategy by stimulating applied digital research and innovation, creating value for the organisations we work with and generating economic and societal impact for the UK. We are proud to be part of UK Research and Innovation.

What we do

- Boost productivity and innovation for industry
- Offer training and skills development
- Provide insights into future technologies
- Give tailored business development support
- Build bespoke small teams around your project