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The loss of systematically important operations could have a serious knock-on effect on the UK economy and economies around the world.

Summary of space weather impacts

Space weather events	Time to affect Earth	Potential impact
Coronal mass ejections	12 hours	Disruption of satellite operations, power grid fluctuations, and communication blackouts.
Solar flares	Minutes to hours	Radio blackouts, satellite damage, and increased radiation levels.
Solar energetic particles	30 minutes	Radiation hazards for astronauts and satellite electronics.

3. Education and awareness

Internal risk teams and business continuity planners.

Businesses should consider the potential impact of space weather on their operations and develop contingency plans. This includes identifying critical systems and data, and ensuring they are protected and backed up. Regular communication and training for staff is also essential.

4. Vendor risk assessments

Assess vendor's exposure to space weather.

Businesses should assess the space weather resilience of their vendors, particularly those providing critical services or infrastructure.

5. Space weather response plans

Determine 'trigger' events to assist them in space weather planning.

Businesses should establish clear triggers for space weather events that require activation of their response plans.

Regular testing and updates to response plans are necessary to ensure they remain effective.

Assess the impact of space weather on multiple systems.

Businesses should consider the cumulative impact of space weather on multiple systems and data streams.

Regular communication and training for staff is essential for effective response.

Businesses should ensure they have the necessary resources and expertise to respond to space weather events.

Coordinated market-wide testing is essential for ensuring the resilience of critical infrastructure.

Businesses should participate in coordinated testing exercises to evaluate their space weather resilience.

Background

The 2011-2012 period saw significant space weather events, including the 'Superstorm' of 2012, which highlighted the need for improved resilience.

Space weather events can have significant impacts on critical infrastructure and services, including power grids, satellite operations, and communication systems.

Businesses should take steps to assess and mitigate these risks, including implementing robust backup and recovery procedures.

Regular communication and training for staff is essential for effective response to space weather events.

Businesses should ensure they have the necessary resources and expertise to respond to space weather events.

Coordinated market-wide testing is essential for ensuring the resilience of critical infrastructure.

Businesses should participate in coordinated testing exercises to evaluate their space weather resilience.

Regular communication and training for staff is essential for effective response to space weather events.

Businesses should ensure they have the necessary resources and expertise to respond to space weather events.

Coordinated market-wide testing is essential for ensuring the resilience of critical infrastructure.

RECOMMENDATIONS FOR FURTHER RESEARCH

Business: Develop and test space weather response plans, including regular communication and training for staff.

Business and academia: Collaborate on research to improve understanding of space weather impacts and develop more resilient systems.

The Met Office: Enhance forecasting capabilities and provide timely warnings to businesses and the public.

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