

# Never a dull day for the Met Office



## The customer

### **A world leader in weather and climate services.**

The Met Office (UK) was founded in 1854 as an experimental government department to research the possibilities of forecasting the weather, mainly to protect the safety of ships and their crew at sea.

Today the Met Office is a world leader in providing weather and climate services with a turnover of £176.5 M in 2007/8. It employs more than 1,700 people at 60 locations throughout the world and remains within the Ministry of Defence, operating as a Trading Fund. The Met Office is recognised as one of the world's best weather forecasters, processing more than 10 million weather observations each day, using an advanced atmospheric model and a high performance supercomputer. Over 3,000 forecasts and briefings every day are delivered to a huge range of customers from the Armed Forces and Government, to businesses and the general public. Other customers of the Met Office include the BBC, and the Civil Aviation Authority.

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 **socomec**  
Innovative Power Solutions **UPS**

# Goals and needs

The Met Office responded to their growing computing demands by replacing its existing servers with 7,744 processors with the latest-generation IBM servers with a computing power of 145 Tflops and a storage capacity of 15.5 Tbytes.

The goal of the power supply system is to protect the critical IT equipment at an overall electrical power of 4 MVA and provide power to the peripherals alone for 15 minutes during blackouts.

All this must guarantee:

- high efficiency
- resilience to failure
- minimum physical footprint
- high short circuit currents
- full compatibility with BMS system based on MODBUS protocol
- integration with existing system



## The solution

### An UPS for the future

**DELPHYS MX Elite** 400 kVA in a modular N+1 configuration (5 plus 1 units) with centralised bypass for reliability and high fault currents: over 45 kA (more than 30 In) for each IT hall.

A winning factor in terms of resilience to failure is the Delphys' ability to operate even if a bypass fault occurs.

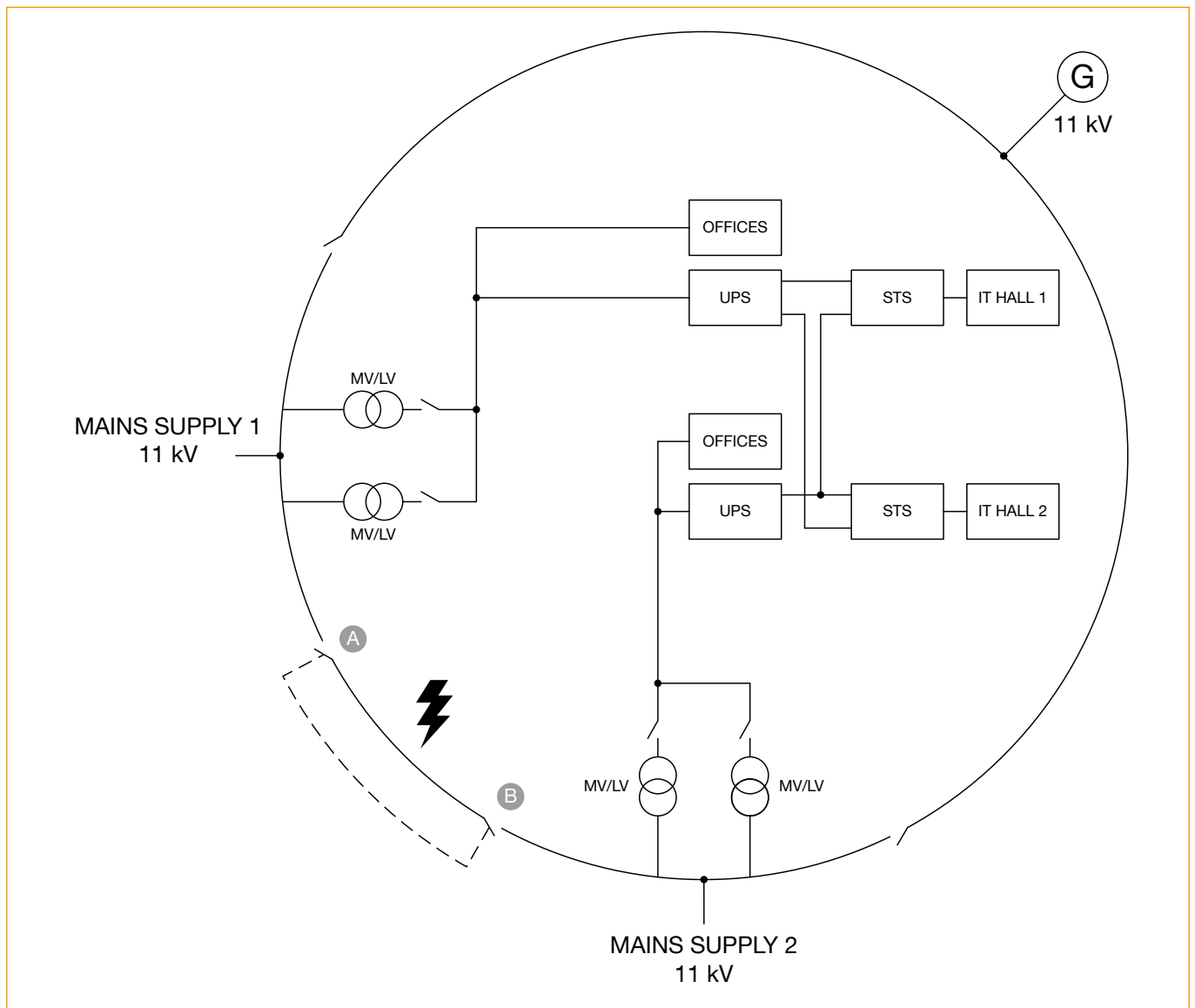
The Delphys, less than half the size of the UPS its replacing, has freed-up space for future plant expansion.

The simplicity of the UPS outlets synchronisation via the **ACS** card has made integration with the previously installed STS units quick and easy.

Finally, in addition to the advantages of the Delphys' high efficiency, there are the different available operating modes.



# The architecture



The architecture is entirely 2N (2x 5 plus 1 units): supply, distribution, conditioning and auxiliaries.

To improve power availability, the critical IT loads are also protected by Load Transfer Modules (LTM), the Socomec static transfer systems, which are already installed in the plant.

The electricity supply consists of an 11 kV loop with two independent connections

to the medium voltage grid distributed via 11kV switching systems which can operate automatically to isolate any faulty sections.

The MV/LV transformation is handled by two 2.5 MVA transformers at each IT hall.

The long term autonomy is provided by four 2 MVA generator sets with the system supporting all the preferential loads in little more than 45 seconds.



# Advantages of the system

The following design features played a significant part in the Met Office's decision to choose the **DELPHYS MX Elite**:

## High availability

- Fault tolerant architecture operating independently of bypass
- Centralised bypass with short circuit current of over 30 I<sub>N</sub>

## Competitive

- High efficiency with ECOMODE and ENERGY SAVER functions
- Minimum footprint, freeing space for future plant extension

## High quality power supply

- Synchronisation of outlets via ACS card for STS "soft-switching"
- Optimum characteristics for IT loads

## Heightened network integration

- Sinusoidal input current, also for non-linear loads
- High input power factor
- Low harmonic content of less than 4.5%

## Easy to use

- Interactive graphic touch screen
- Full compatibility with BMS MODBUS protocol

## Focus on

### MET OFFICE

- 1,700 staff
- 3,000 specialised daily forecasts
- 2 MVA of current IT load to protect
- N+1 architecture with autonomy of 15 minutes

### SOCOMECS UPS

- 2 x 6 **DELPHYS MX Elite** 400kVA
- Centralised bypass
- Minimum physical footprint
- ACS synchronisation system

### Advantages

- High efficiency
- Perfect integration with existing plant
- Small footprint and modular capability for future expansion
- High short circuit currents



### Peter Clayton-White

Met Office Building Services Engineer  
says of Socomec:

"Excellent past experiences, the pre-design assistance and the high quality product have again convinced us to put our faith in SOCOMECS UPS."



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