

# **UIC WEBINAR**

Sharing Railway Response to the Iberian Power Outage: Impact on Railway Systems and lessons learned

OF RAILWAYS

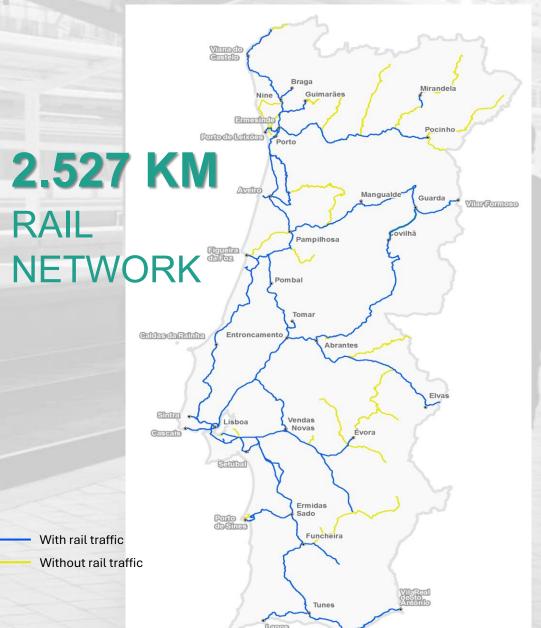
UIC INTERNATIONAL UNION

Rui Silva | Miguel Cruz Infraestruturas de Portugal Resilience of Telecom System in case of power outage.

# **Main Figures**









TRAINS / RAIL TRAFFIC 36.400.000 Trains.km/Year



ELECTRIFIED RAIL

1.790 km



RAIL NETWORK 2.527 km



STATIONS 581 With Rail Traffic



GOODS – BY RAILWAY 10.600.000 Tons/Year



BRIDGES & TUNNELS 7.800



SUB-CONCESSIONED NETWORK 1.013 km



NETWORK UNDER DIRECT JURISDICTION 14.036 km



ROAD VEHICLES 25.000.000.000 Vehicles.km/Year



GOODS – BY ROAD 180.000.000 Tons/Year

**EMPLOYEES 3.588** 





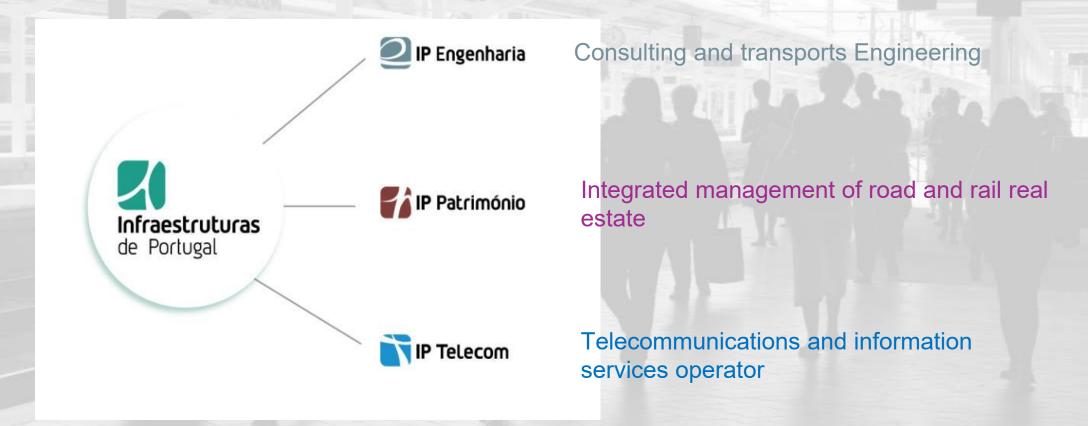
# Crisis Management and Business Continuity @ Grupo IP

# **Crisis Management and Business Continuity**





Scope



Business
Continuity
Scope

IP-DSI – Information SystemsIP-DAT – Accessibilities, Telematics and ITSIPT – IP Telecom





**28th of April 2025** 



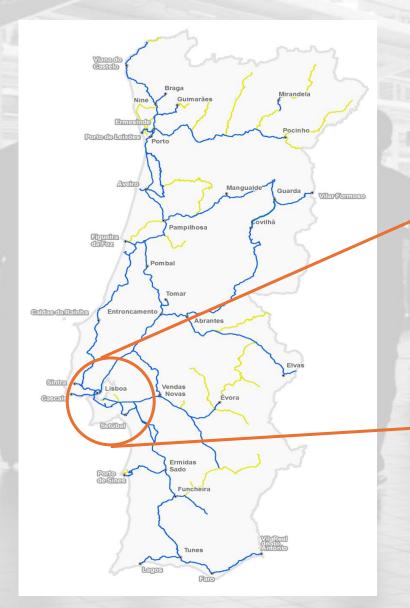


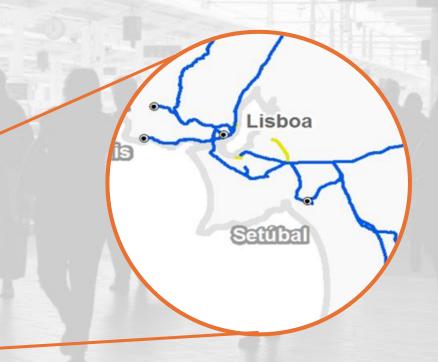
General strike without minimum services.











~ 54 km

2% of IP's Rail Network

With rail traffic
Without rail traffic





**28th of April 2025** 



11h33

14h03

19h10

21h10

00h18



Power failure

Normal operation in installations with power generators

Disruptive mobile communications

Total failure in the Datacentres of Oriente and NSOC (14h03) and Viseu (15h07) due to fuel shortage

Total interruption or disruption of traffic control support applications/systems

Total interruption or disruption of corporate systems

Refuelling of the Datacentres' generators - Oriente (19h10) and Viseu (19h40)

Restoration of energy supply and mobile communications



First
Passenger
Train

Progressive recovery (with variable performance but most recovered by the end of 29/4)

Porto Datacenter without interruption or disruption. Supported by generator (48h autonomy)







### Impact on train traffic

## **Passenger**

5 supressed (Stopped at train station)

# Freight

- 1 supressed
- 1 stopped outside station limits (open line)
- 4 reached their destination (diesel)



### Impact on train traffic control

Total interruption or disruption of traffic control support applications/systems

Total interruption or disruption of corporate systems



## What went well





### TTX 23/05/2024 - Scenario

## Power outage in the Oriente area (Lisbon)...

"The night of May 22-23 was characterized by heavy rain and thunderstorms in the Lisbon area. As a result, the Sacavém and Alto de São João Transformer Substations, which supply IP's facilities in the Gare do Oriente area, were heavily affected by the weather affected by the storm (flooding due to drainage problems and unavailability of equipment due to electrical

to guarantee the safety of the electricity supply."



# What went well

# TTX 23/05/2024



23<sup>rd</sup> may



IP-DAT, IP-DSI, IPT



IP Headquarters Pragal (Lisboa)



Duration – 2h45 TTX Time – 4h00



DDO + CISO (IPT)



131 interactions (Communications/Actions)



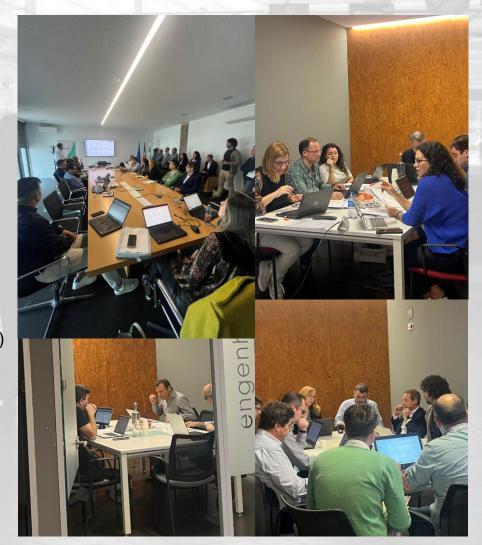
8 Planning18 Players6 Observers



23 Injects







# What was the Grupo IP's reaction?

- ✓ Grupo IP conducted a deep review involving al organizational areas (30/04 – 16/05);
- ✓ Presentation and discussion at the quarterly meeting of the Business Continuity Committee (which was already scheduled for the 19<sup>th</sup> of may);
- ✓ Implementation of an action plan (2<sup>nd</sup> semester) complementary to the annual BC action plan (e.g. creation of energy and communications task forces)





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# What went well





- ✓ Ability to adapt and remain calm, try to maintain productivity;
- ✓ High ability to work under pressure while remaining calm and focused;
- ✓ Throughout the incident, IP's headquarters (Pragal) ensured the continuity of service that did not depend on the Oriente's Datacentre, including access to external communications;
- ✓ Existence of backup power, by generators, in several buildings, and particularly the CCO (Operational Control Centers).







### 1. Awareness of Risk and Vulnerabilities

- The risk of a general and prolonged power failure is more likely than previously thought.
  The event revealed vulnerabilities in terms of infrastructure (backup power with limited autonomy, communications redundancy) and procedures.
- There is an increased risk associated with recovering older equipment/systems (cloud, signalling, traction...).









# 2. Energy

# Strengths:

- Have alternative energy sources that support several of the Group's critical facilities (generators and batteries);
- Role of IP Liaison Officer in the PT Authority Civil Protection coordination for fuel supply from national reserves.

### **Vulnerabilities:**

- Not sufficient to cover all essential services for such a prolonged energy outage;
- We don't have an alternative energy system/grid that would allow a complete coverage aligned with the criticality of buildings and systems covered.
- Definition of autonomy levels should be carefully setup as well as procedures for use as a saving mode and appropriate energy segregation.





### 3. Communications

### **Vulnerabilities:**

- Energy disruption led to conventional communication systems failure (low aut
- Absence of alternative communication system system and equipment's, that could allow completely prevented from communicating internally and externally with potentially serious consequences (e.g. need for help, urgent interventions, etc.)
- Need for redundancy for the NSOC (Network and Security Operational Centre).

# Strengths:

Possibility to access to the National Emergency and Security Network licenses.





# 4. Leadership, People and Processes

Determining factors for a successful reaction/recovery are:

- The way teams are managed, with greater delegation of competences/autonomy,
   team spirit and co-operation;
- Well-defined and assimilated operational processes (for easier adaptation).







# 5. Business Continuity and Resilience Culture

- The need to clearly identify the critical activities within the scope of Business Continuity within the IP Group (it is understood that the critical activities are those in the technological area, rail traffic and safety - this classification needs to be reviewed and stabilized) – under the Directive (UE) 2022/2557;
- The need to provide all critical activities with business continuity tools to enable them

to cope with disruptive events.







# **5. Business Continuity and Resilience Culture**

- Existing contingency plans are not comprehensive enough and have shortcomings;
- It is still necessary to keep plans and other critical information (internal and external contacts) in hard copy;
- Exercises are a recognised way of training actions, but they need to be as realistic as possible.

The need to strengthen everyone's awareness and commitment to organizational resilience.

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THANK YOU FOR YOUR PARTICIPATION!

