



CLIMATIC EVENT OF MAY/2024 IN RIO GRANDE DO SUL - BRASIL

The case of the reconstruction of Porto Alegre Airport after the historical flood

September 22nd, 2026



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- Has a degree in Mechanical Engineering, Masters in Aeronautics (ITA); PhD in Mechanical Engineering (*Aeronautics Product Service Systems*) by McGill University, Canada.
- With 26 years of experience in aerospace and aviation industry, having worked in companies such as Embraer and Bombardier. Author of six scientific papers published in international Product Development journals and conferences. Currently working as Head of Airport Maintenance and Infrastructure at Fraport Brasil.

FRAPORT BRASIL

- Concession started in 2018
- Fortaleza and Porto Alegre, for 30 and 25 years, respectively
- Jeri concession started in Sept/2026
- Scope: operation and infrastructure expansion works.



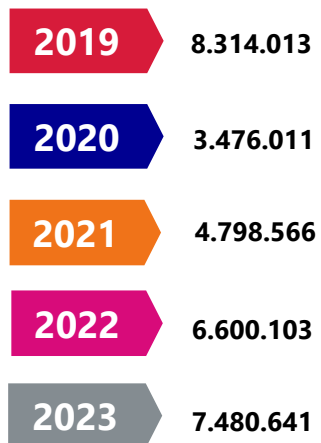
PORTO ALEGRE AIRPORT

This aerial photograph captures the Porto Alegre Airport (Aeroporto de Porto Alegre) under a clear blue sky. The central focus is the large, modern terminal building with a light-colored, flat roof. To the left of the terminal, the tarmac is active with several aircraft. Two smaller jets with red and white livery are parked near the terminal's left wing. In the center, a larger white jet with a red tail and 'TAM' branding is being serviced by ground crew. To its right, a white jet with a blue and red tail, identified as 'LATAM', is also on the tarmac. Further right, another 'TAM' aircraft is visible. The terminal building has multiple levels and a series of jet bridges extending from it. In the background, beyond the airport grounds, a cityscape is visible with various buildings, including a prominent circular structure and a tall tower. The foreground shows the paved tarmac with yellow directional markings and a small patch of green grass on the left.

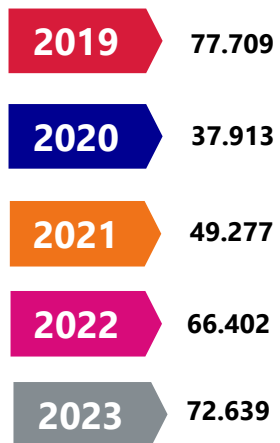
BUSINESS FIGURES



PAX

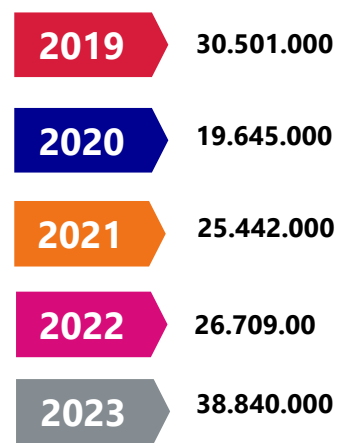


FLIGHTS

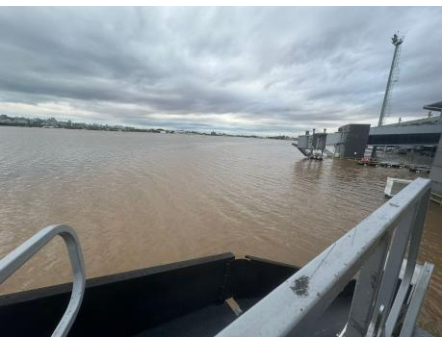


CARGO

(CARGAS, MALA POSTAL, COURIER) em Kg



THE FLOODING



Porto Alegre Airport was severely impacted by the flooding in Rio Grande do Sul, in the beginning of May/24.

- **185 people lost their lives**
- **478 impacted municipalities**
- **600.000 people had to leave their homes**
- **2.4M people impacted**

On May 3rd the airport had its operations suspended.

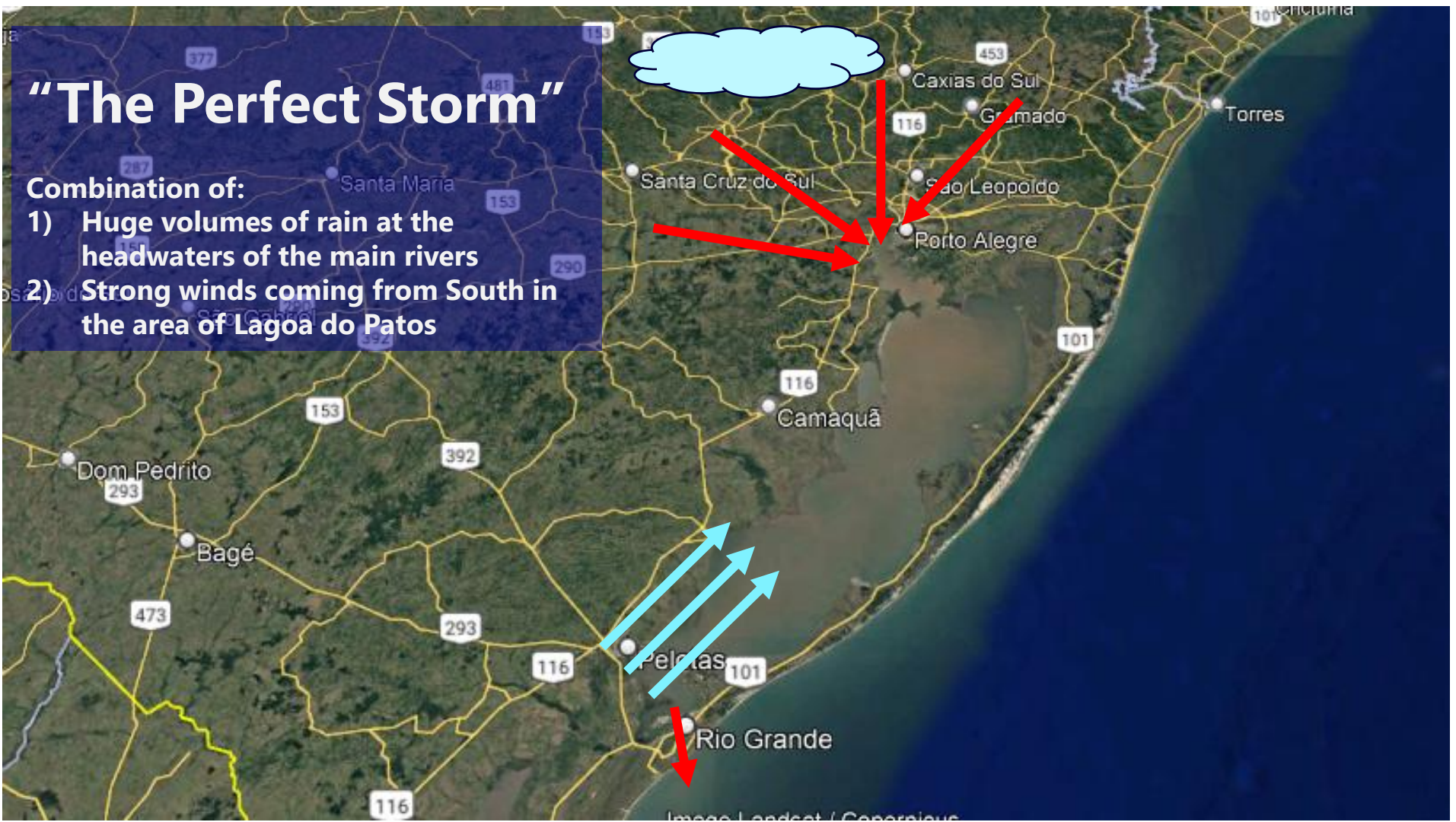
All the airport infrastructure was impacted by the water from the rivers.



"The Perfect Storm"

Combination of:

- 1) Huge volumes of rain at the headwaters of the main rivers
- 2) Strong winds coming from South in the area of Lagoa do Patos

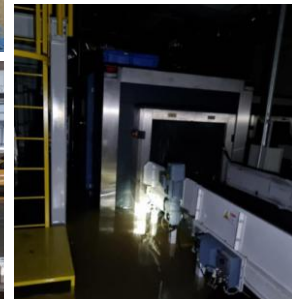
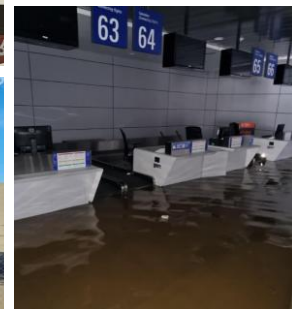
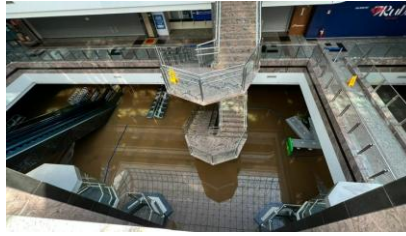


An aerial photograph of a coastal city, likely Miami, showing extensive flooding. The water has inundated large areas of land, including parking lots, streets, and some commercial buildings. In the foreground, several orange construction barriers are visible in the floodwater. A large, modern building with a curved roof is partially submerged. In the background, a dense urban skyline is visible under a clear blue sky. A yellow rectangular box with black text is overlaid on the right side of the image.

**26 days under
water**

DIMENSION OF THE DAMAGES

- RWY 2300m, taxiways, 3 Aprons
- 10 substations
- 18 buildings, including 33.000 m² of Terminal
- 10 X-rays, 11 elevators, 6 escalators
- 15 PBBs
- 30% of BHS, 3 tomographers (XCTs)
- 4 chillers and all pumps of HVAC
- Furniture
- 7 IT technical rooms, including the data center
- 200 km of cables
- 150.000 tons of asphalt



MANAGEMENT OF THE CRISIS

IN THE HOURS PRECEDING THE FLOODING

Immediate actions

- The crisis mgnt group has been called
- Coordination with local authorities, airlines, ATC, ANAC
- Protection of the infrastructure, saving as much equipment as possible
- Extract as many people as possible
- Provide minimum source of electricity for people who were staying in the airport



And then, on May 3rd the operations were suspended

- Level of the water rose up to 2m in certain areas, blocking completely the access to the airport
- Access only by boat during more than 20 days
- Secure the place, provide potable water, means to get food

**HOW LONG IS GOING TO TAKE TO REOPEN AIRPORT
OPERATIONS?**

WHAT IS THE EXTENSION OF THE DAMAGES?

**HOW LONG IS GOING TO TAKE TO RECOVER THE
INFRASTRUCTURE?**

**CAN WE TRANSFER OPERATIONS TO ANOTHER
AIRPORT?**

Contingency Operation

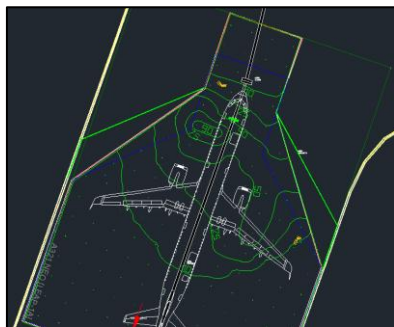
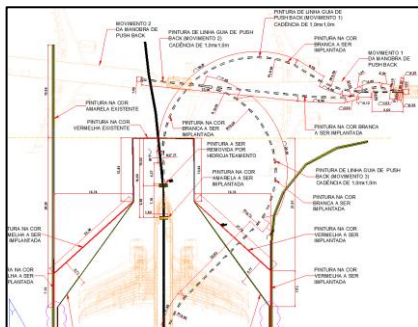
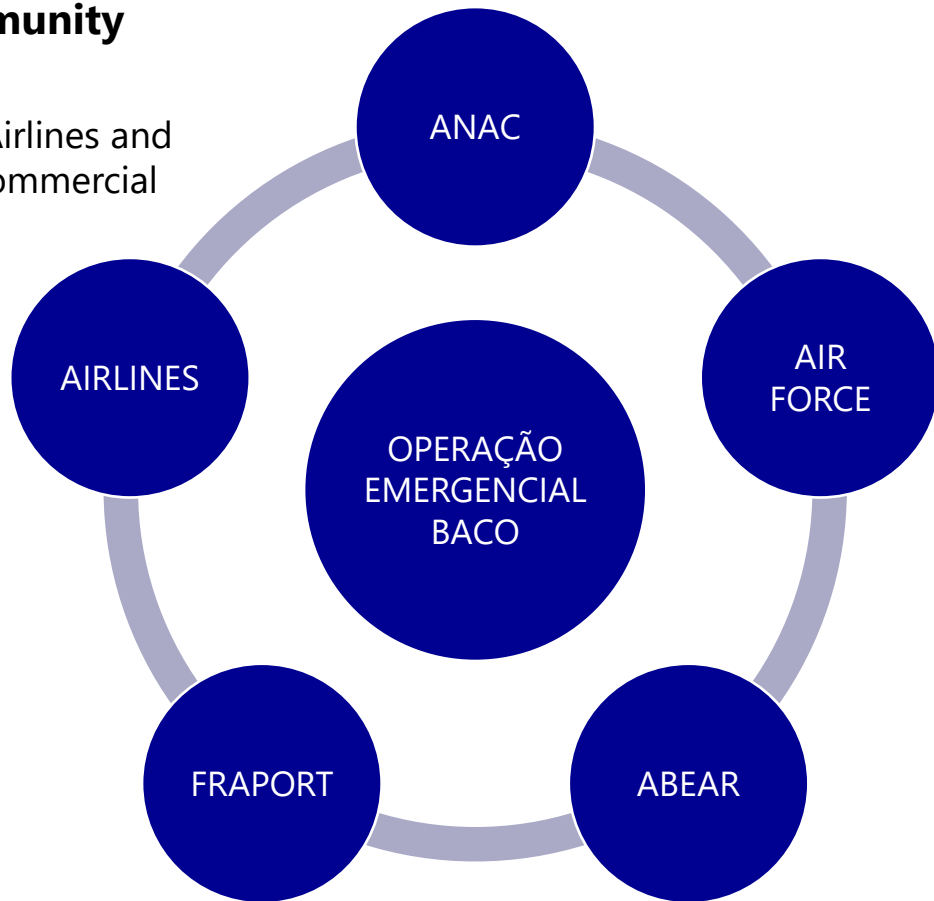
Reconstruction Planning

COMMERCIAL OPERATIONS IN CANOAS AIR FORCE BASE (BACO)

Coordination of a quick response to the Community

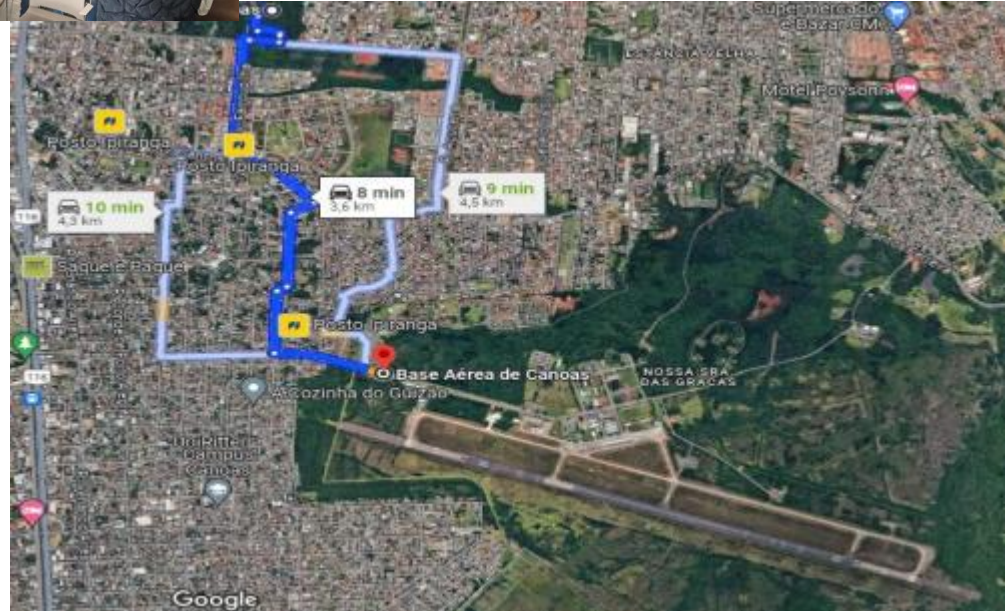
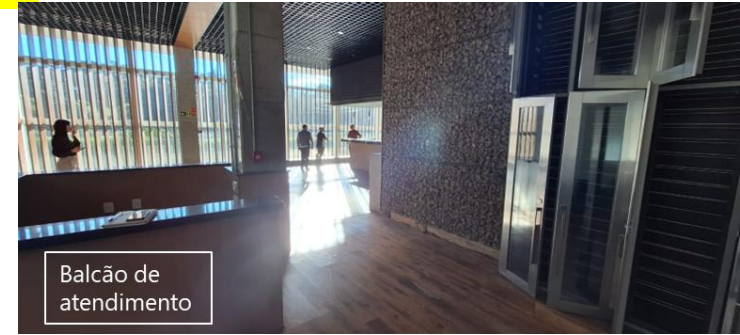
A join effort among ANAC, Brazilian Air Force, ABEAR, Airlines and Fraport was put in place to implement a contingency commercial operation in Canoas Air Force Base:

- Designing parking positions
- Simulating aircraft/equip movements
- Study of illumination conditions
- Assessing types of operations and constraints
- Logistics of passengers and ground handling
- Safety and security issues



CONTINGENCY OPERATION IN BACO MAY 27TH

3,6Km (8min by bus)
Starting with 5 flights per day



RECONSTRUCTION PLAN

Phase 01: Diagnosis

Cleaning and damage assessment

Phase 02: Partial recovery – Only domestic flights

Focus on recovering a minimum required infrastructure (Airside and Landside) to allow partial operations of domestic flights

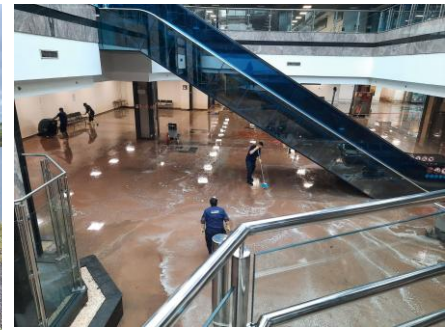
Phase 03: Complete recovery of infrastructure/operations

Focus on recovering the remaining infrastructure

LEVEL OF THE WATER STARTED TO DROP



PHASE 01 29.05 – 15.07.2024



PHASE 01 29.05 – 15.07.2024



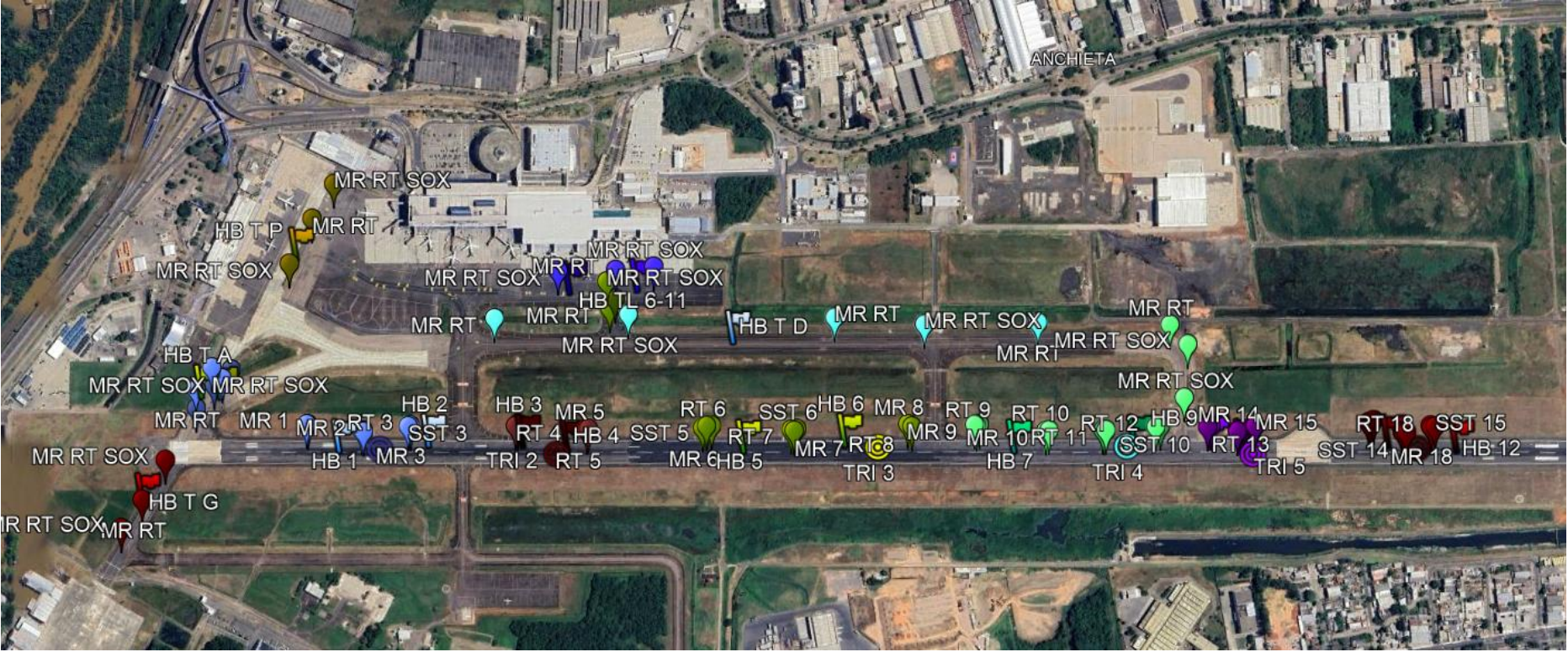
BHS – RECOVERY PROCESS



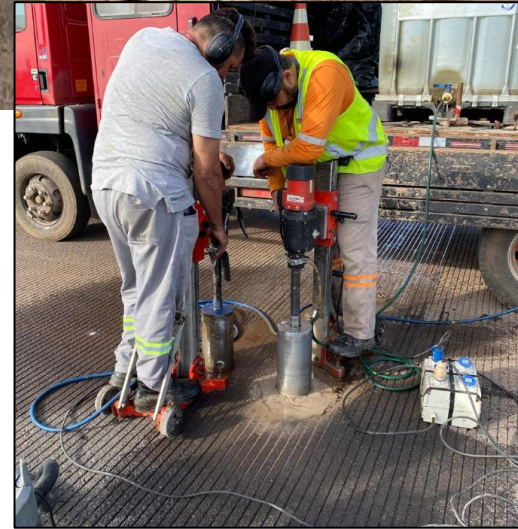
AIRFIELD LIGHTING SYSTEM



AIRSIDE TESTS PLAN



AIRSIDE TESTS



BIGGEST IMPACT: ON ASPHALT PAVEMENTS

After a comprehensive tests campaign (45 days), with the participation of three labs analyzing hundreds of samples collected from field, the test results showed that the asphalt material of the pavements suffered a significant loss of stiffness, caused by the prolonged time (23 days) of submersion in water.



PHASES 02 / 03:

A TWO STEP APPROACH

PHASES: DOM / INTER

PHASE 02: Only domestic operations in a short RWY (1730m)

Planned ECD: 21/Out/24



PHASE 03: Reopening of international operations – RWY 3200m

Planned ECD: 16/Dez/24



RECONSTRUCTION

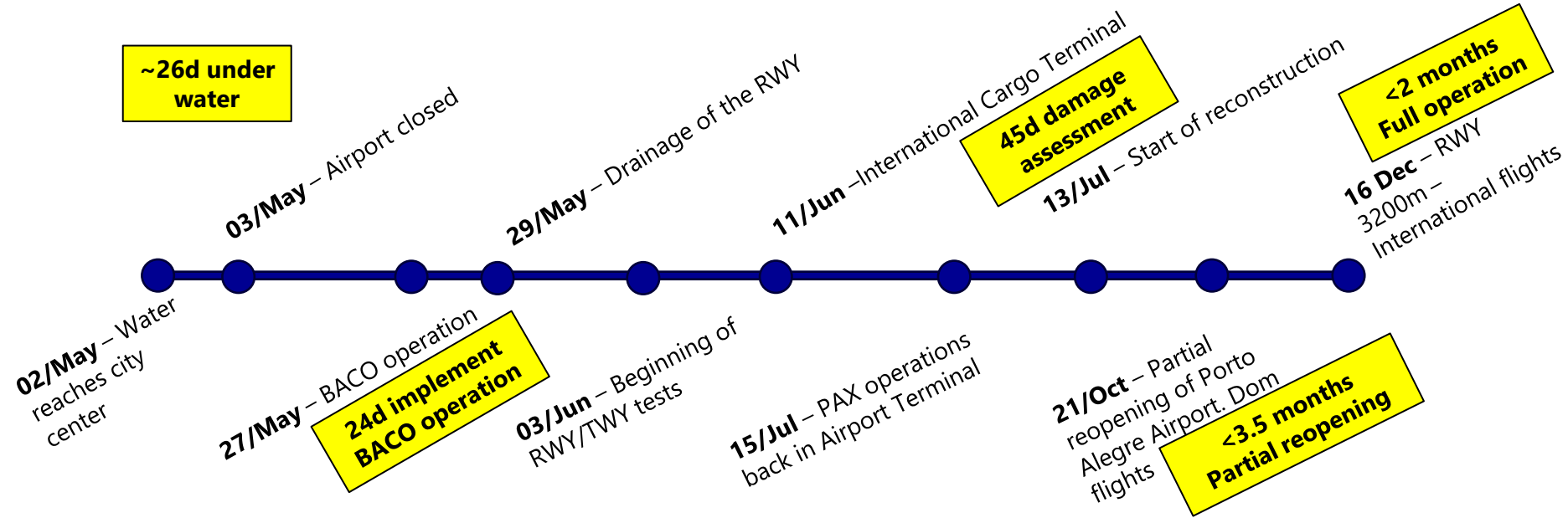


FIRST DELIVERY OCT 21ST

- RWY: 1.730m
- Operation hrs: 8h til 22h
- 71 movements (TO and landings);
- Limited number of parking positions;



TIMELINE FROM THE DAY OF THE FLOODING UNTIL REOPENING



**THANK YOU FOR YOUR
ATTENTION**

