

CSUC

# The Iberian Power Outage

From the point of view of the network

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ANELLA  
CIENTÍFICA

23rd SIG-NOC Meeting

CSUC

14-10-2025

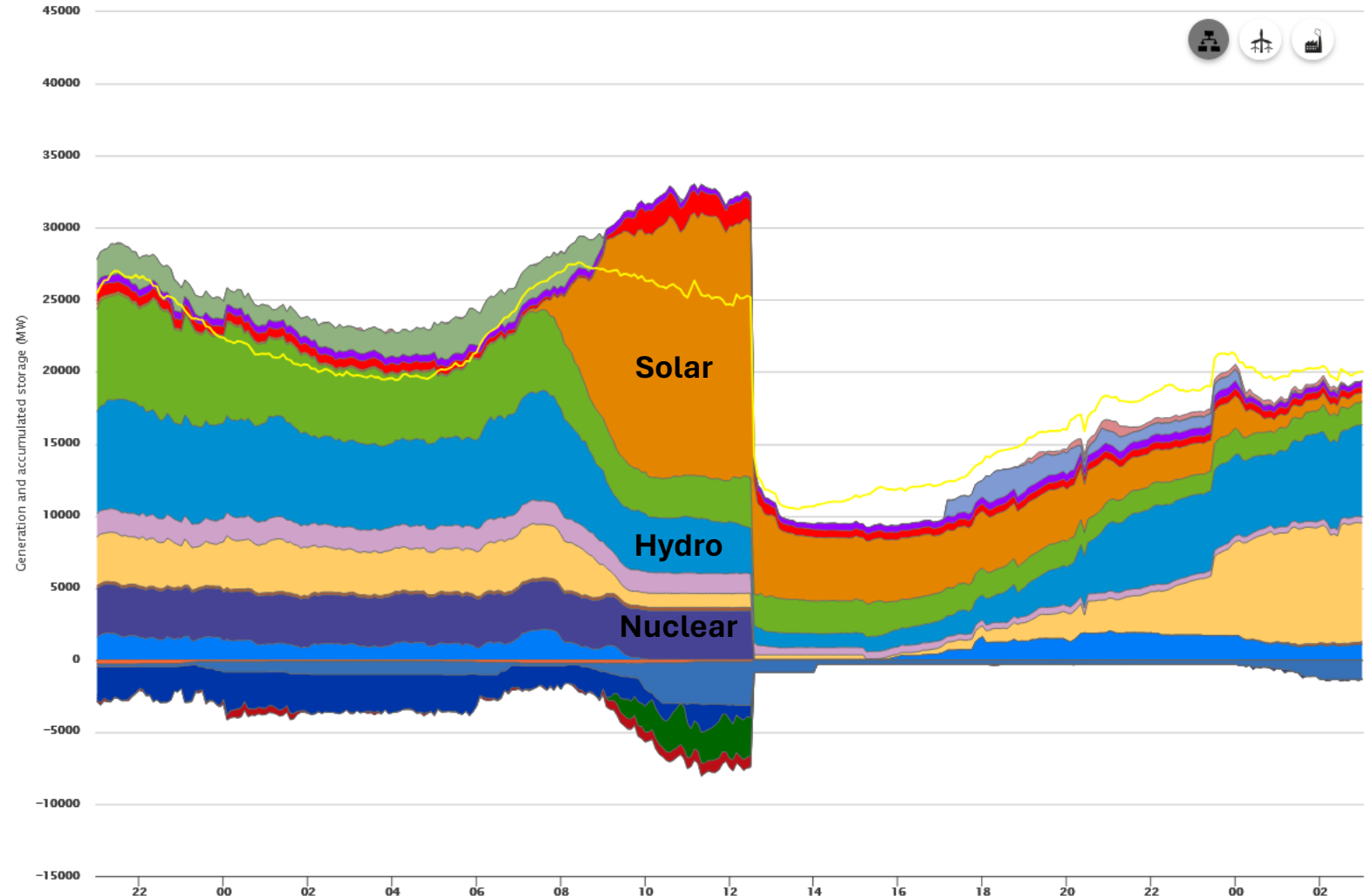
CSUC



# On the 28th April, at 12:33

Generation structure and progressive cumulative storage (MW) at the 17:35 - 04/28/2025

Demand	12705	- (%)
Importation Morocco	8	0.07 (%)
Importation Portugal		(%)
Importation France	1141	9.99 (%)
Thermal renewable	463	4.05 (%)
Solar thermal	525	4.6 (%)
Solar PV	3953	34.62 (%)
Wind	1860	16.29 (%)
Hydro	1723	15.09 (%)
Cogeneration and waste	389	3.41 (%)
Combined cycle	667	5.84 (%)
Coal		(%)
Nuclear		(%)
Pumping Turbine	698	6.11 (%)
Battery delivery		(%)
Balear link		(%)
Battery charging	-1	- (%)
Pumping consumption	-284	- (%)
Exportation France		(%)
Exportation Portugal	-1	- (%)
Exportation Morocco		(%)
Exportation Andorra		(%)



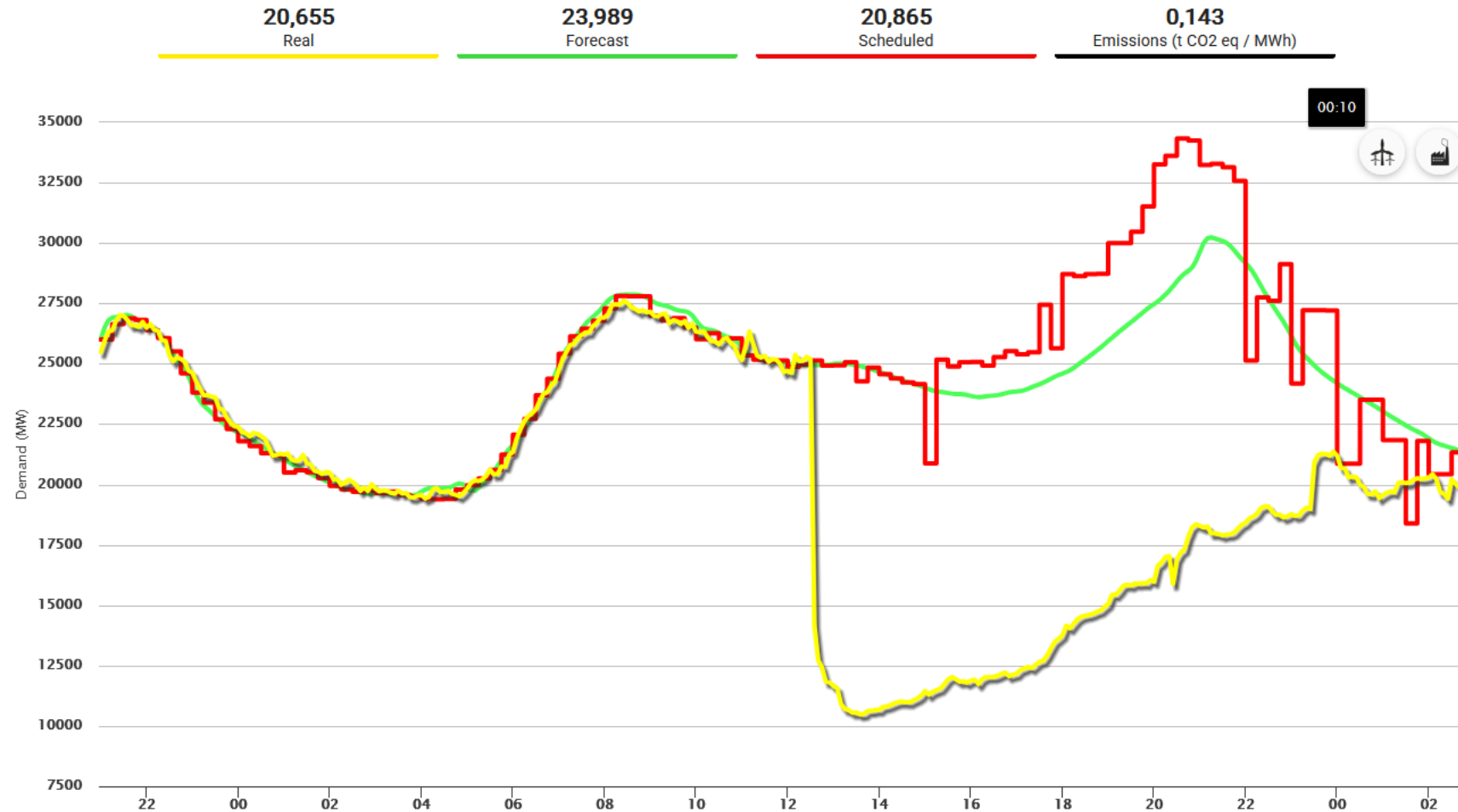
17 GW suddenly “disappeared” from the network

<https://demanda.ree.es/visiona/peninsula/demandaau/acumulada/2025-04-28>

# On the 28th April, at 12:33

Spanish Peninsula - Electricity demand tracking in real time

Demand (MW) at 00:10 - 04/29/2025



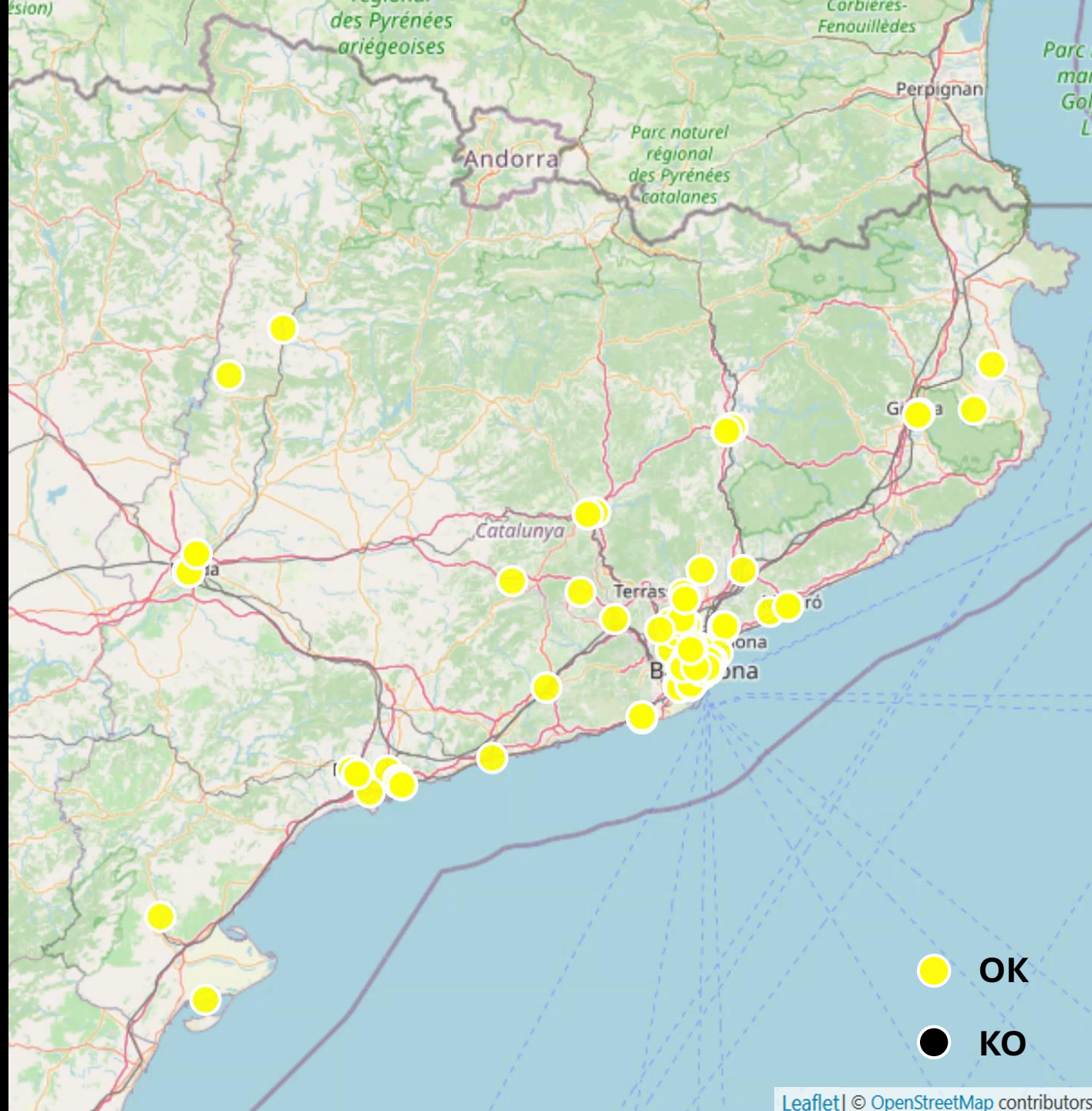
Maximum daily 27,710 at 08:22 - 04/28/2025

Minimum daily 10,453 at 13:35 - 04/28/2025

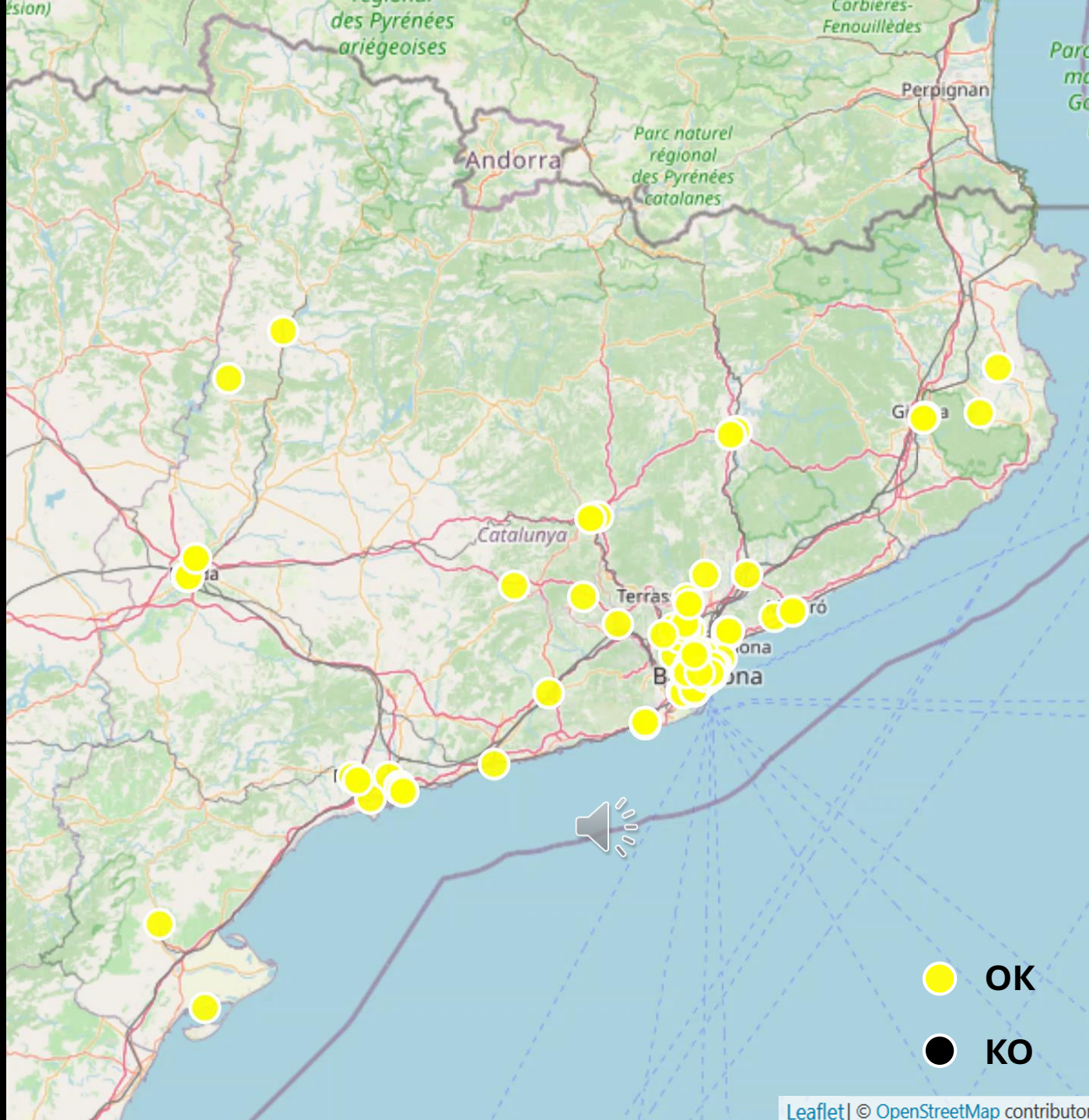
< 04/28/2025 >



Abril 28, 12:30

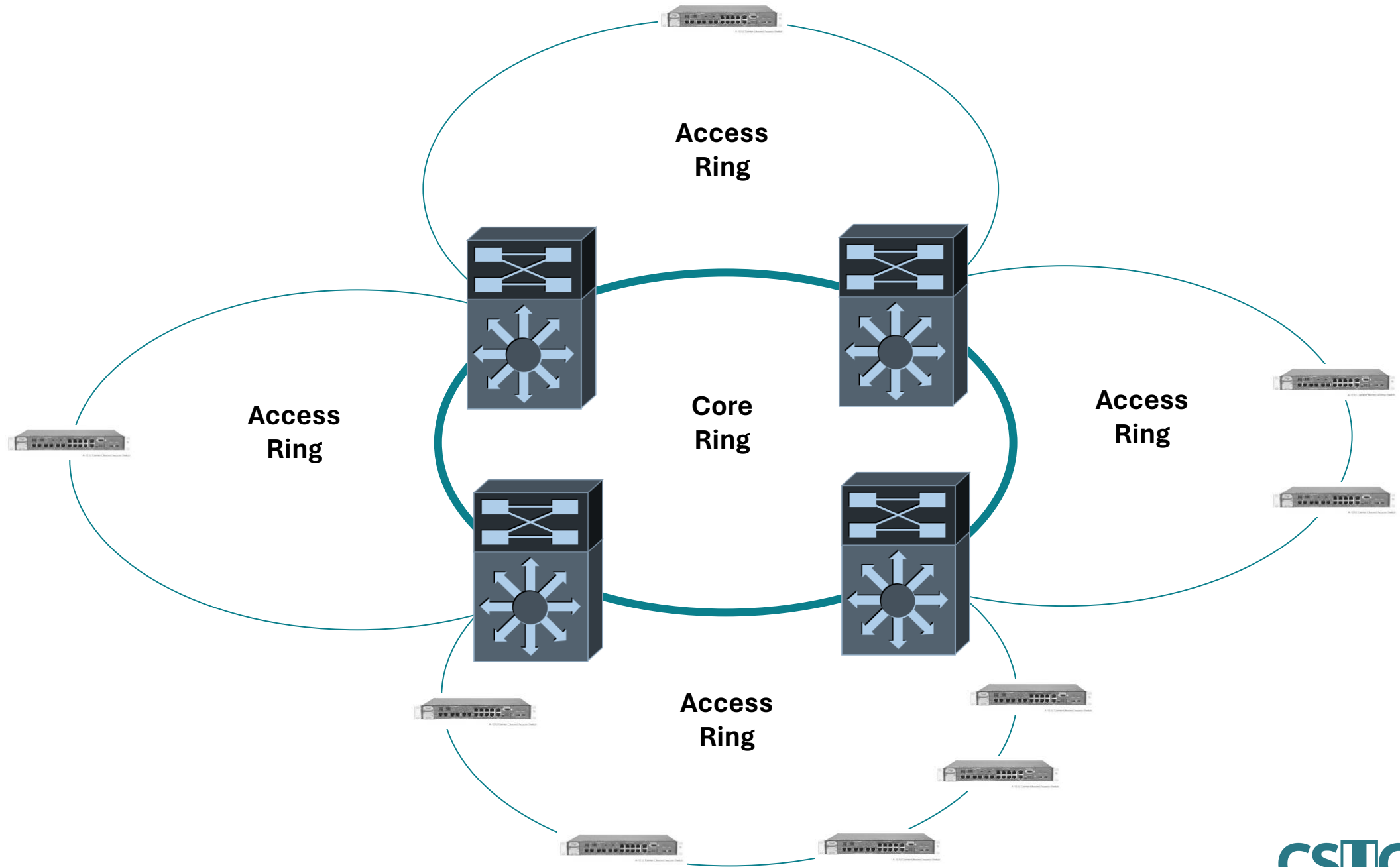


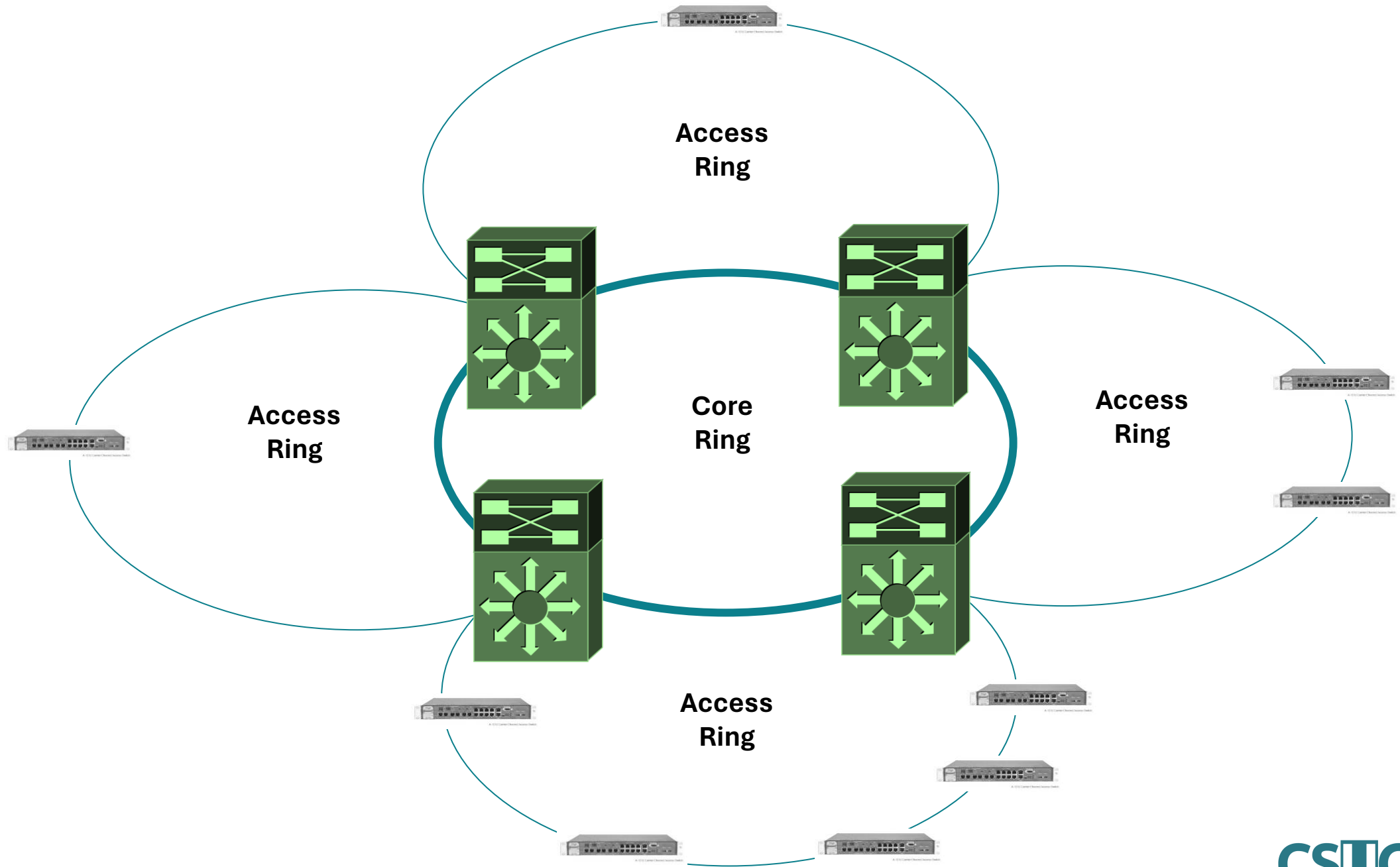
**Abril 28, 12:30**

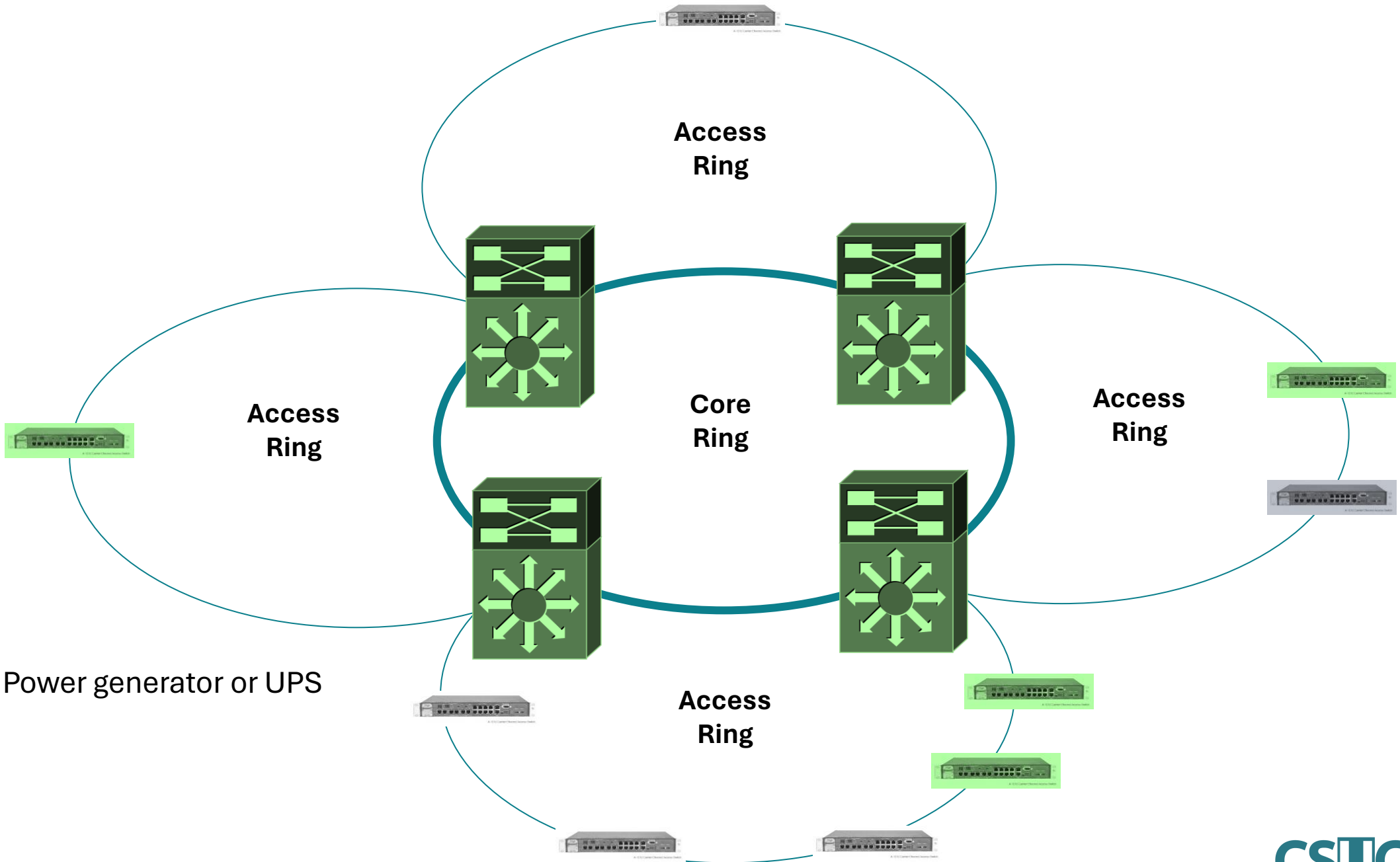


<b>IEEC-OAM</b> Abril 28, 12:38 - Abril 28, 23:35	<b>IRTA-CO</b> Abril 28, 12:36 - Abril 28, 21:36
<b>MACBA</b> Abril 28, 12:36 - Abril 28, 23:36	<b>EUSS</b> Abril 28, 12:34 - Abril 28, 18:33
<b>IDIBELL-B</b> Abril 28, 12:34 - Abril 28, 22:12	<b>IRTA-MO</b> Abril 28, 12:34 - Abril 28, 23:09
<b>CEMCAT</b> Abril 28, 12:33 - Abril 28, 15:27	<b>CGE</b> Abril 28, 12:33 - Abril 28, 18:11
<b>EUG</b> Abril 28, 12:33 - Abril 28, 23:58	

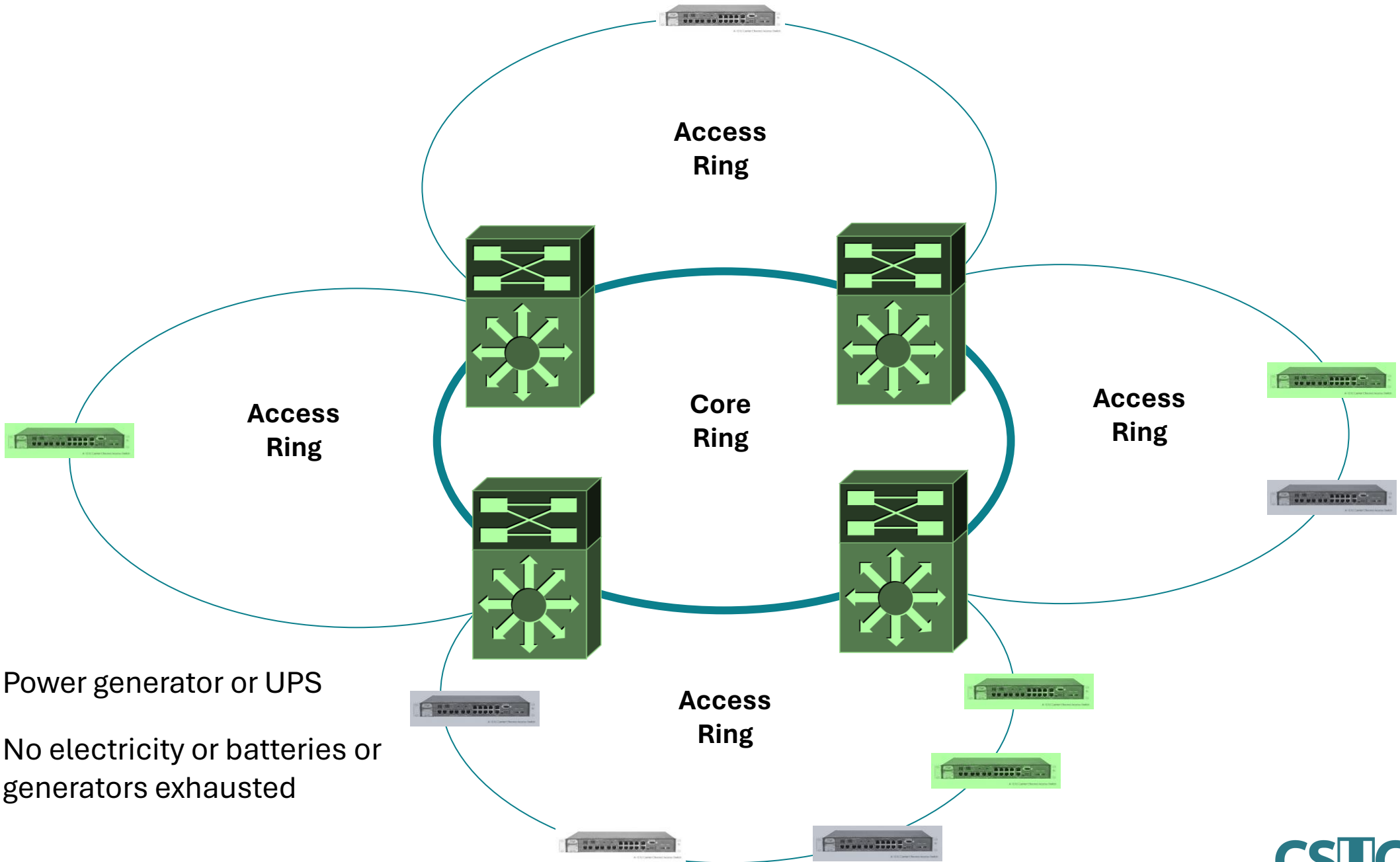
- OK
- KO





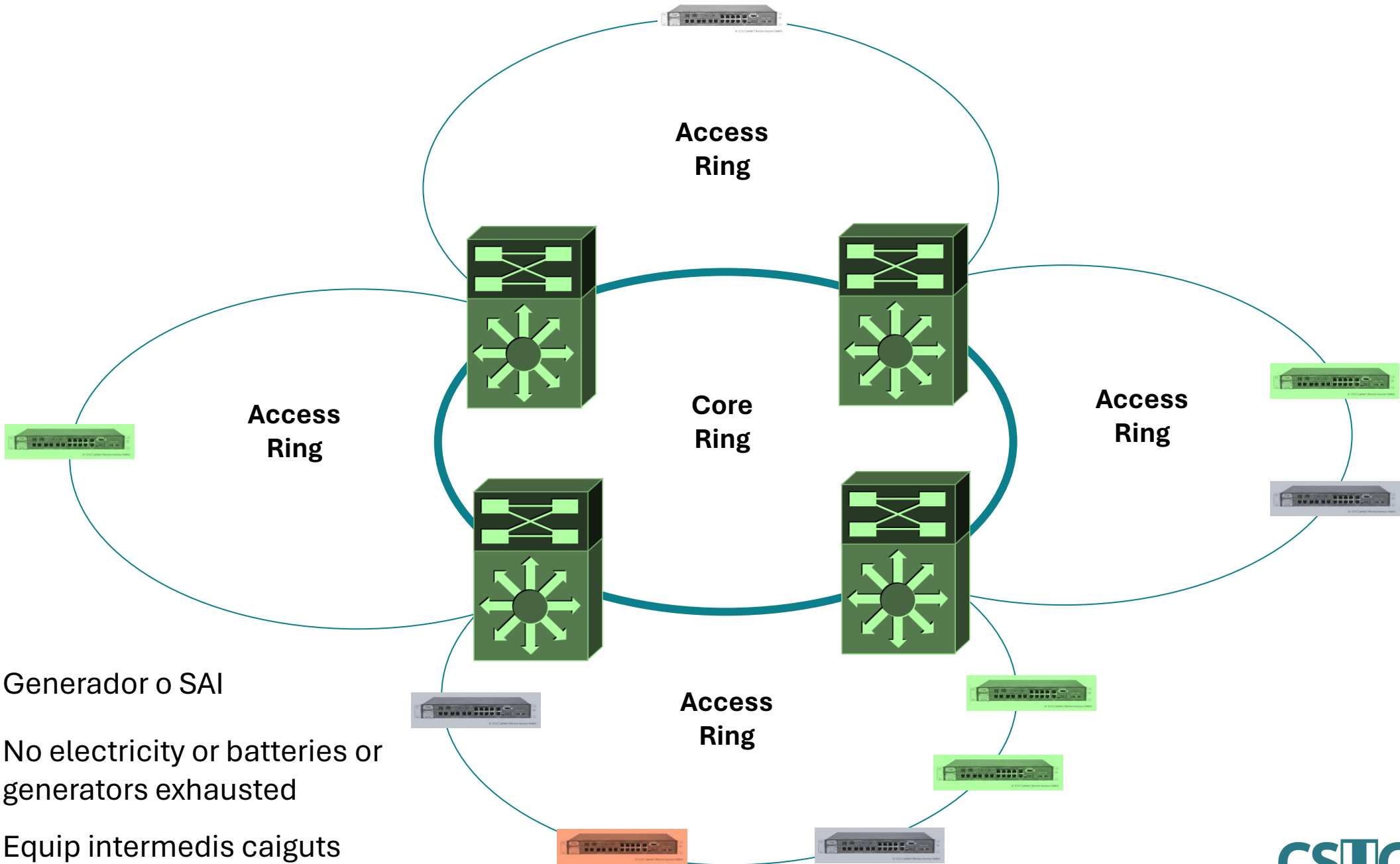


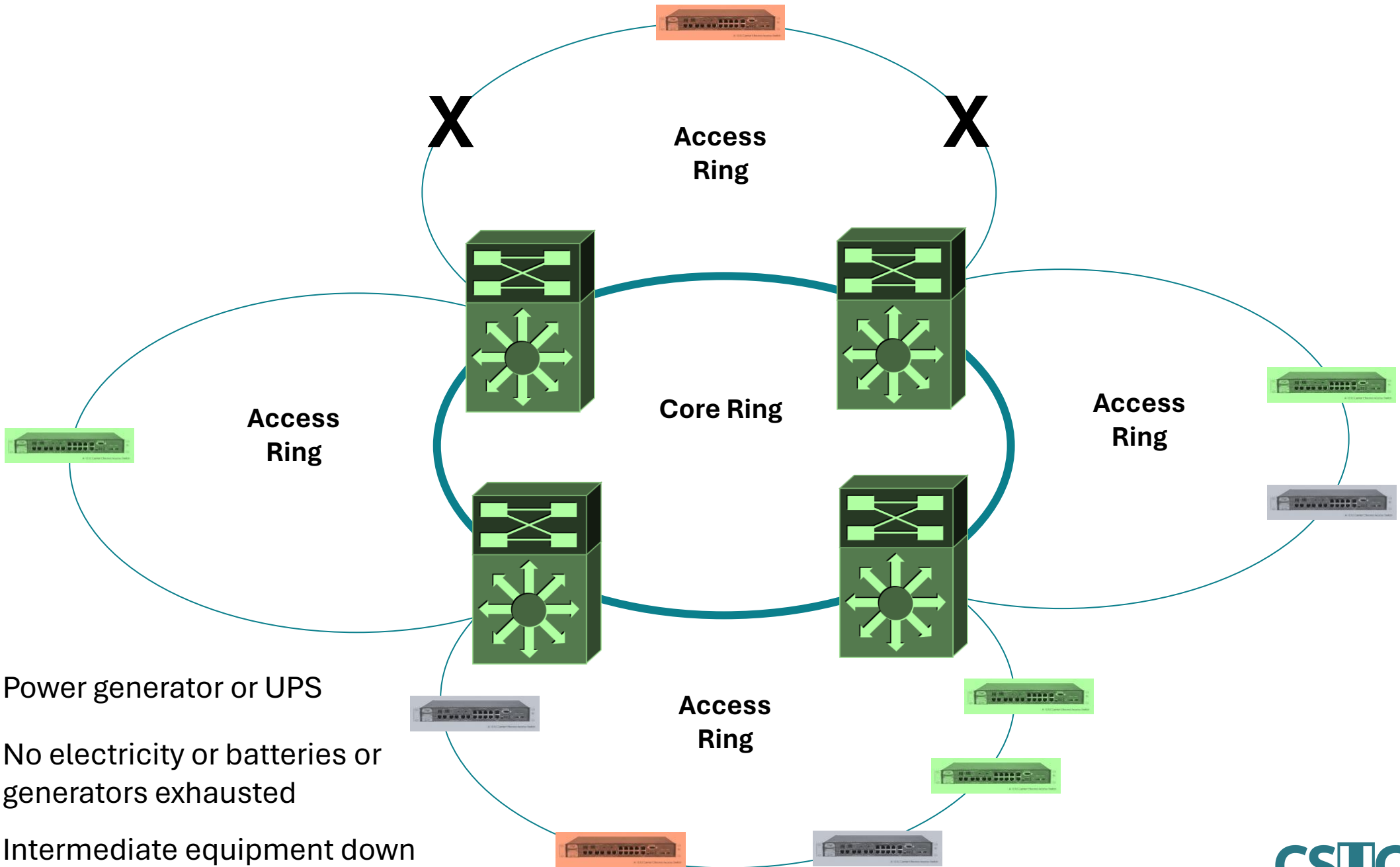
Power generator or UPS



Power generator or UPS

No electricity or batteries or generators exhausted





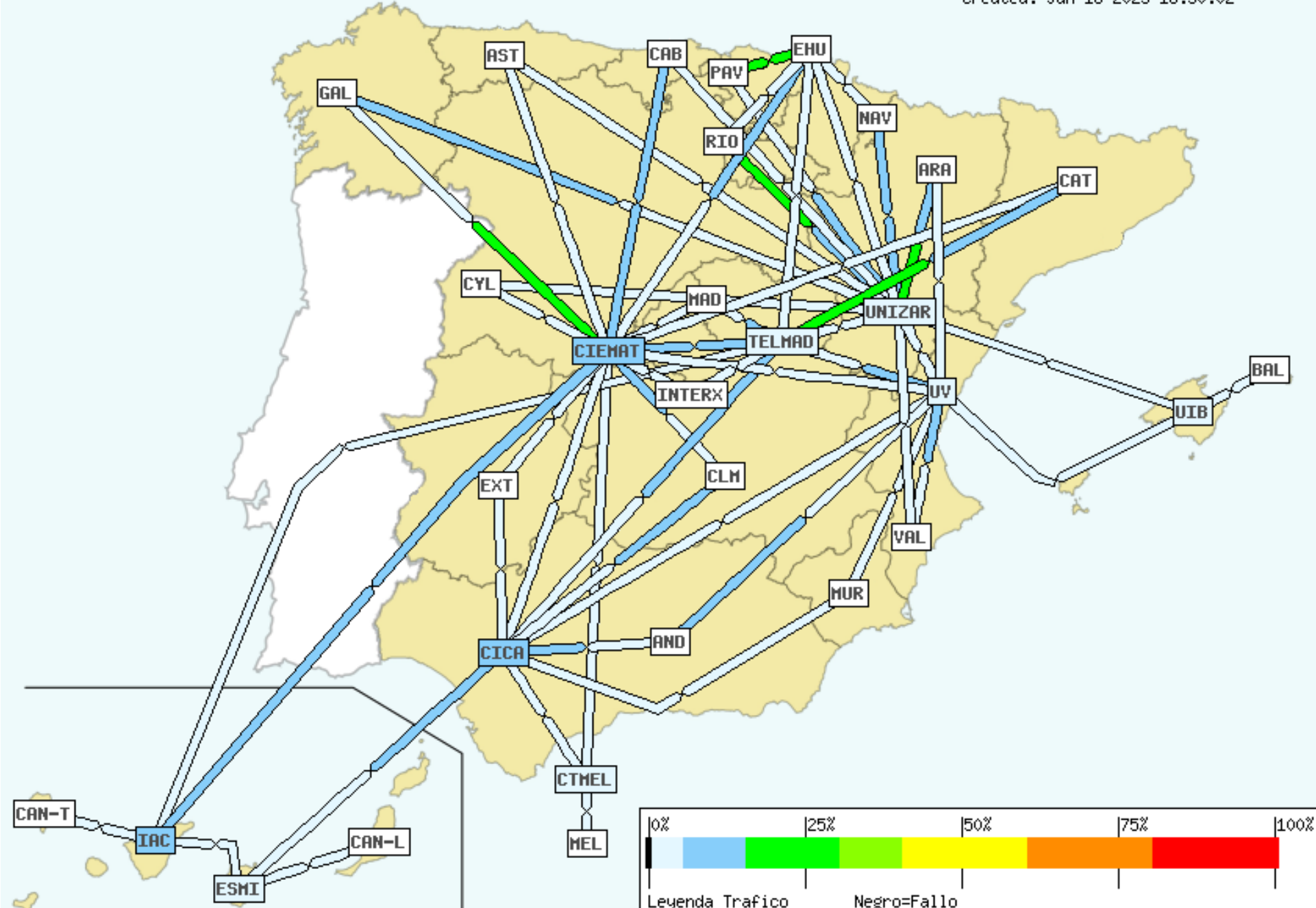
Power generator or UPS



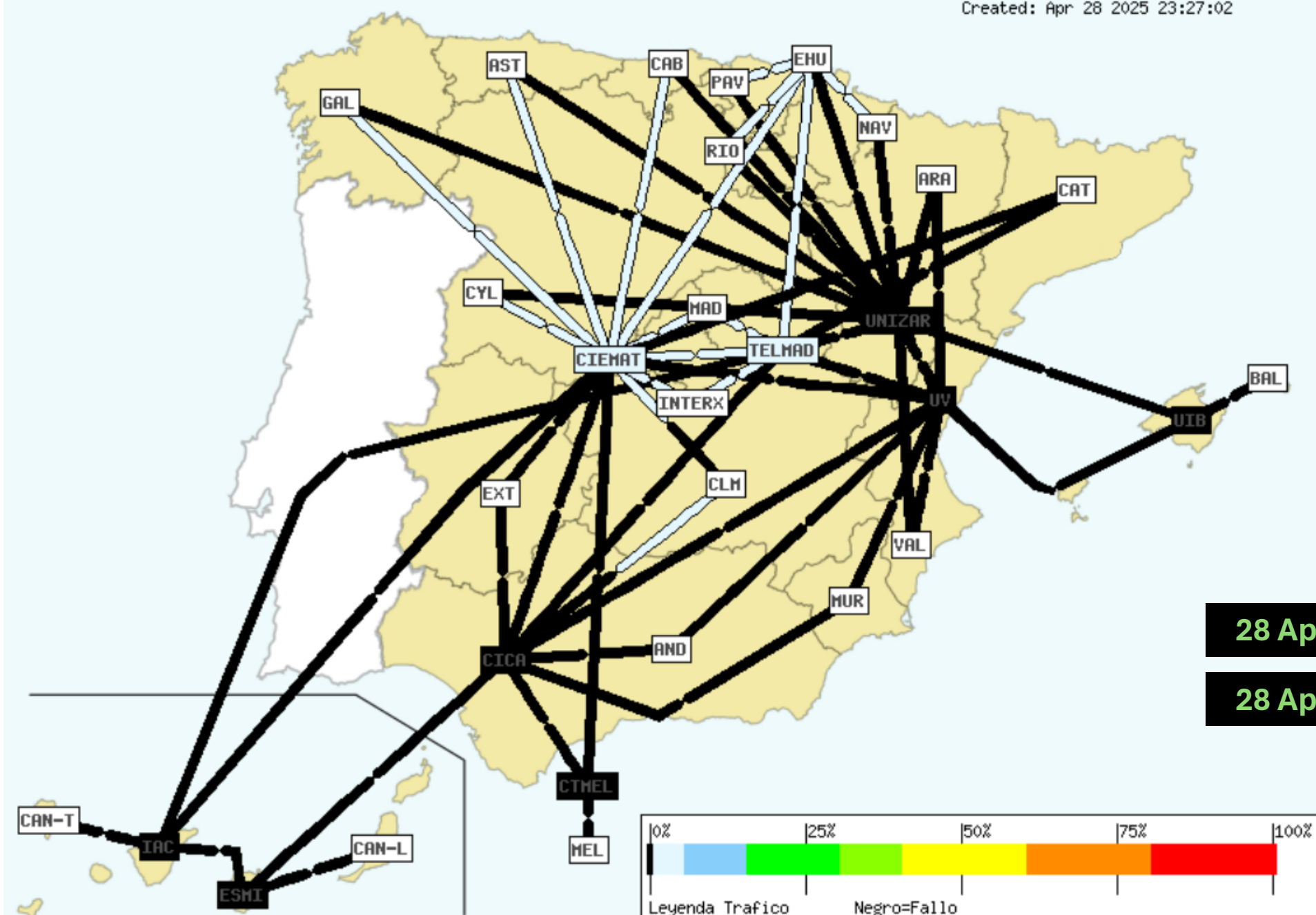
No electricity or batteries or generators exhausted



Intermediate equipment down

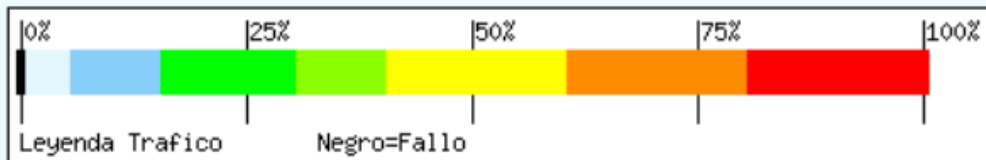


<https://www.rediris.es/conectividad/weathermap/>



28 April, 22:17

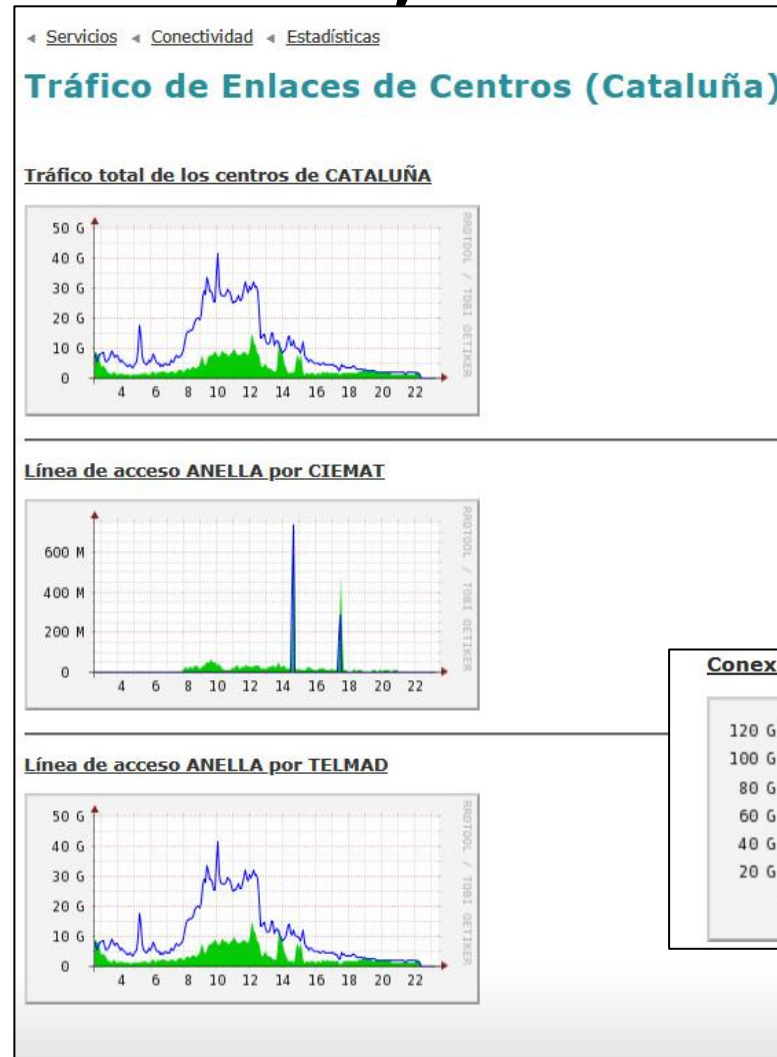
28 April, 23:57



<https://www.rediris.es/conectividad/weathermap/>

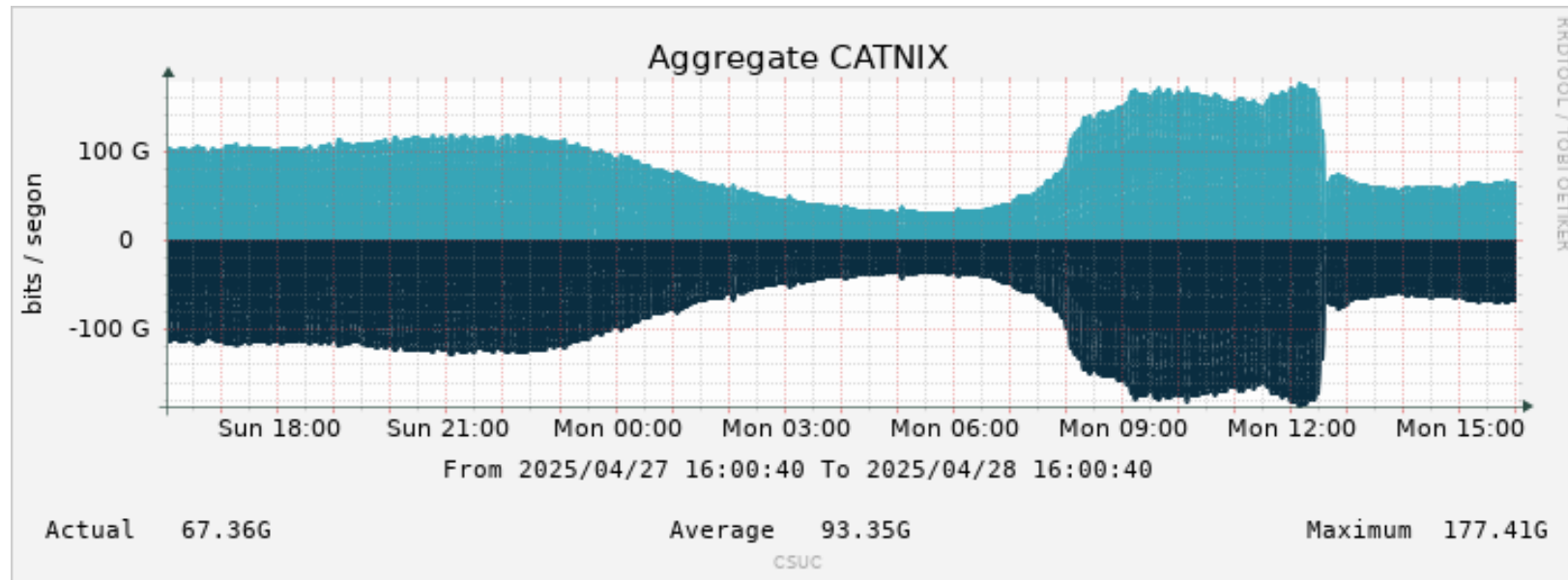
# All optical channels with RedIRIS, down

- Although the core equipment was up and running on both sides, the intermediate amplifiers were getting exhausted (gas stations were not able to pump diesel!).
- Two previous outages Madrid-Barcelona:
  - 14:32 – 14:35
  - 17:21 – 17:24
- Probably when the first path was down and the optical channels were redirected?
- Even the islands -that did not have a power outage as the peninsula- had communication problems through academic and commercial networks.



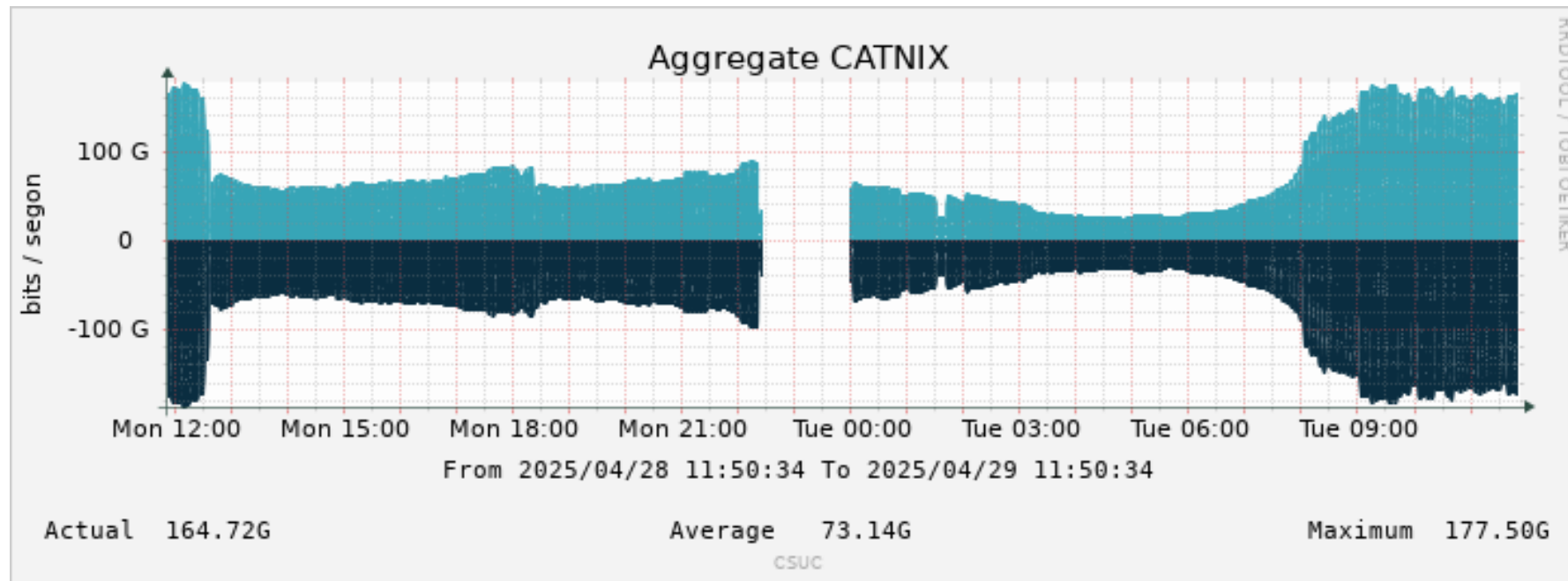
# Meanwhile, at CATNIX

The 4 nodes were up and running through the whole power outage. Just one peer of 59 went down. There was a significant drop in traffic: the core network was running, the last mile wasn't.

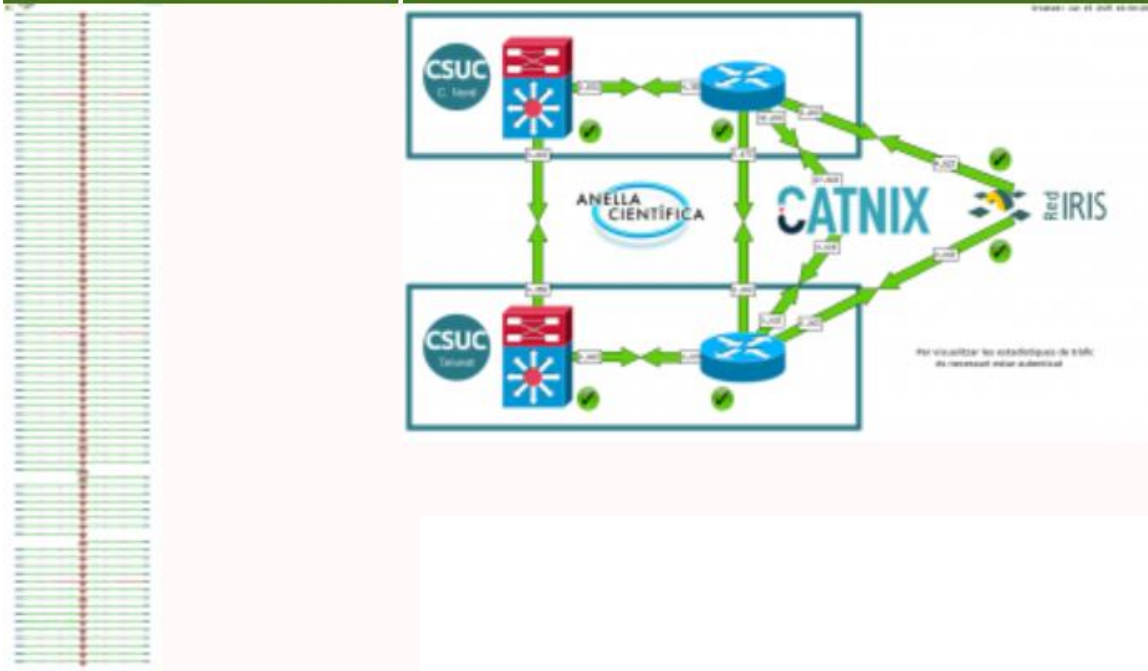


# Meanwhile, at CATNIX (II)

But the cut with RedIRIS caused internal problems to our DNS and the statistics stopped working although the traffic was flowing.



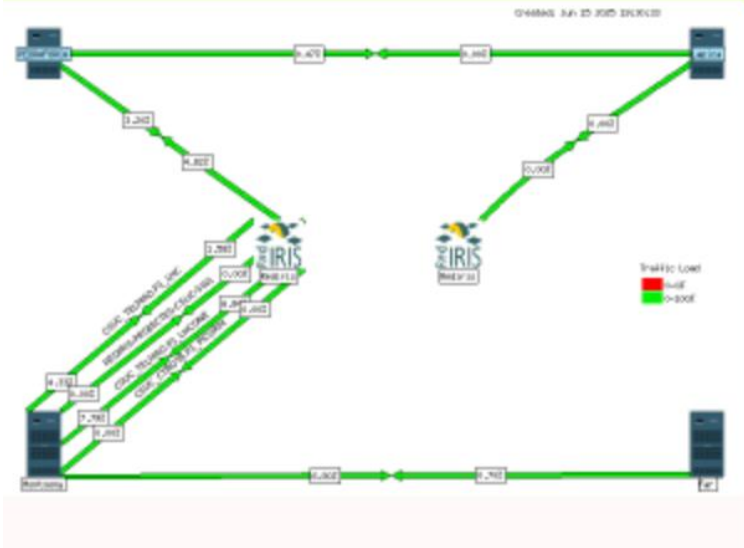
GIGANET i DWDM amb BGP Troncal Anella Científica



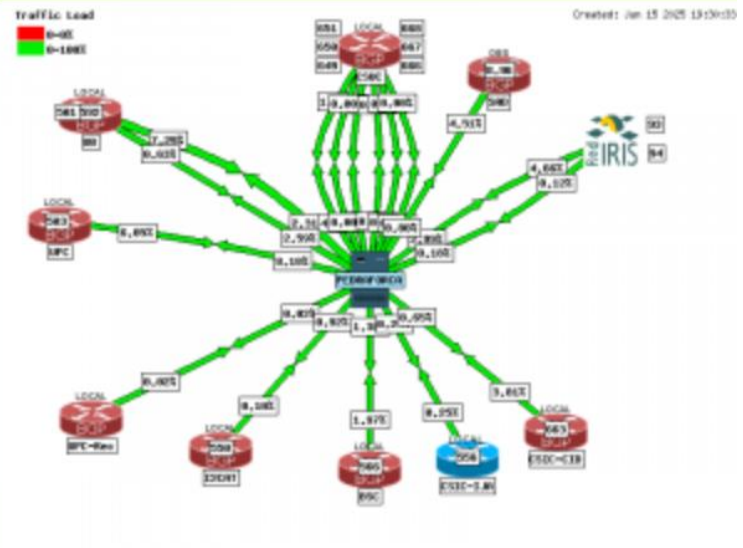
CATNIX

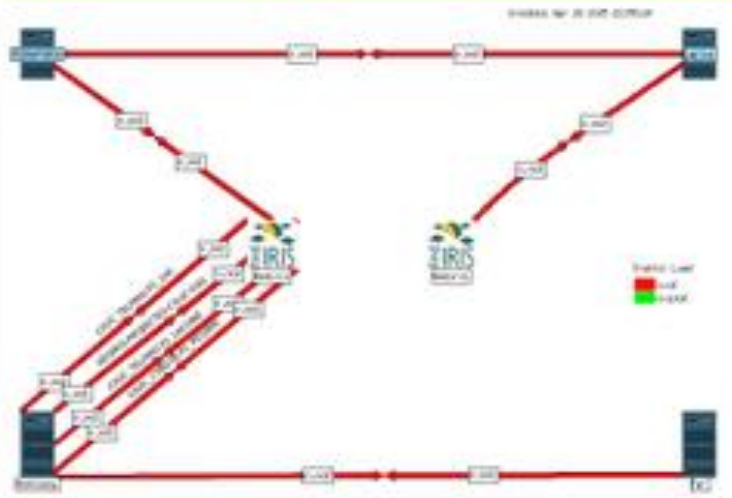
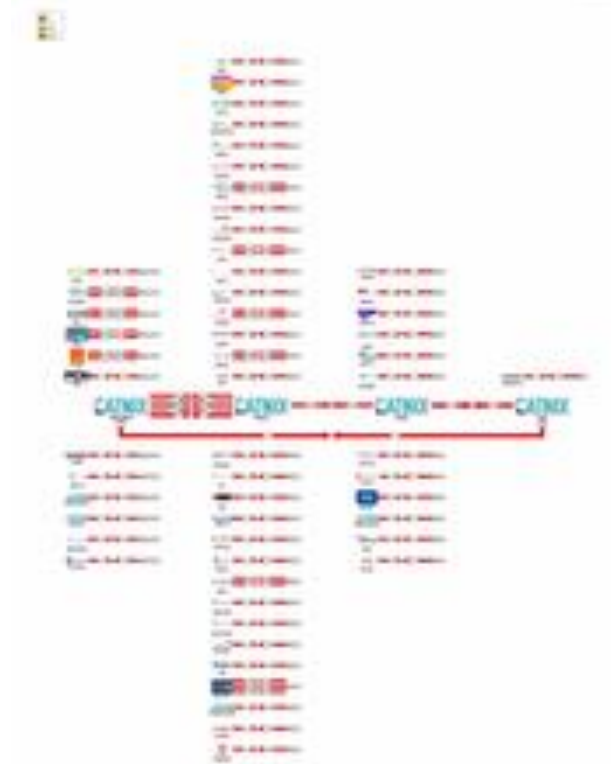
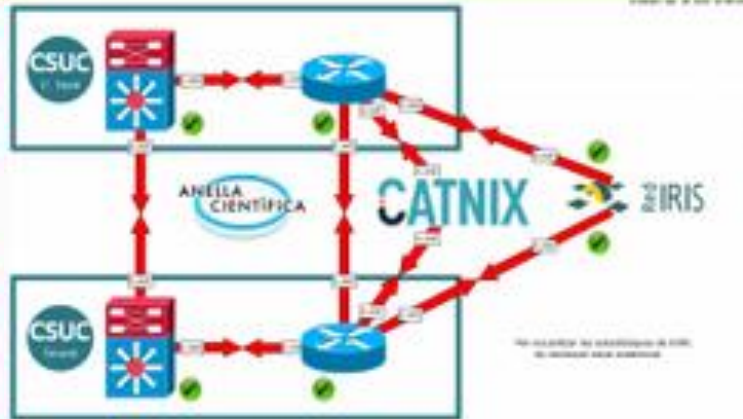
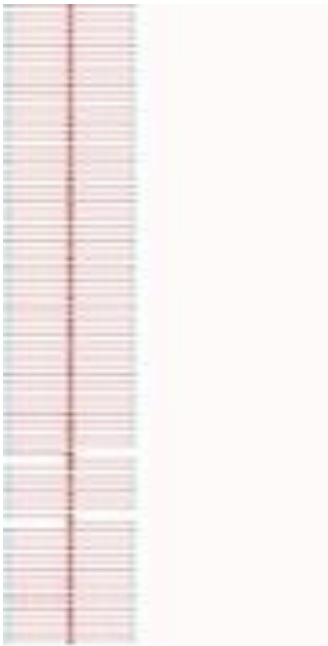


REDIRIS PROJECTES



LOCALS i REDIRIS

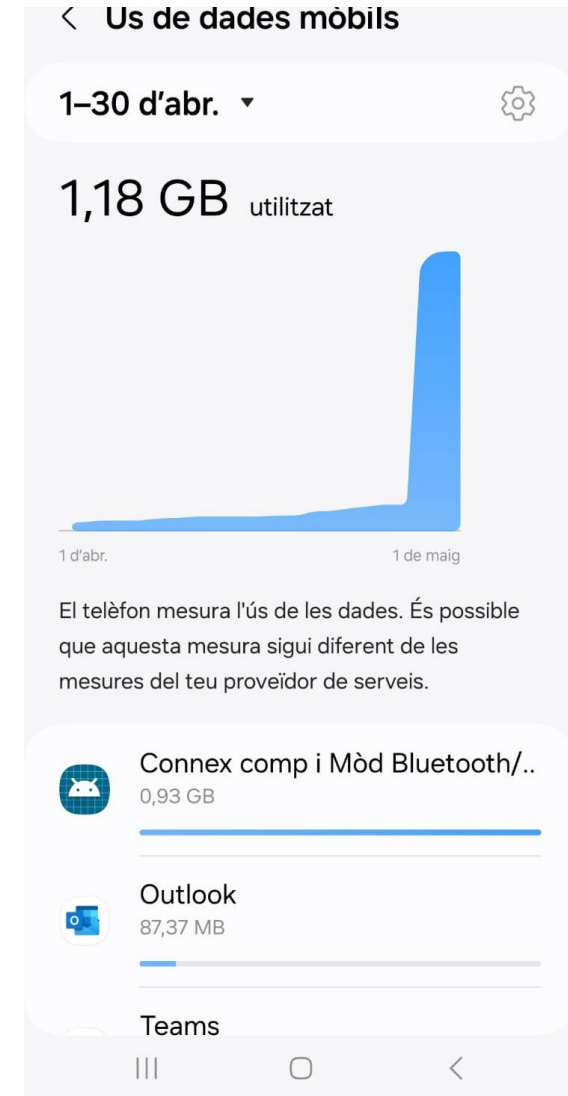




28 April, 22:17

# CSUC was accessible all the time through CATNIX

- Using the data from the mobile phone.
- In case there was a close antenna with a proper generator, which was my case 😊
- This way, I was able to follow the evolution of the incidents in real time.



# Thank you!

# CSUC

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YouTube

