



CASSINI

# Internet Resilience in Kazakhstan

*An interdisciplinary research study*

**2024 Pulse Research Review**

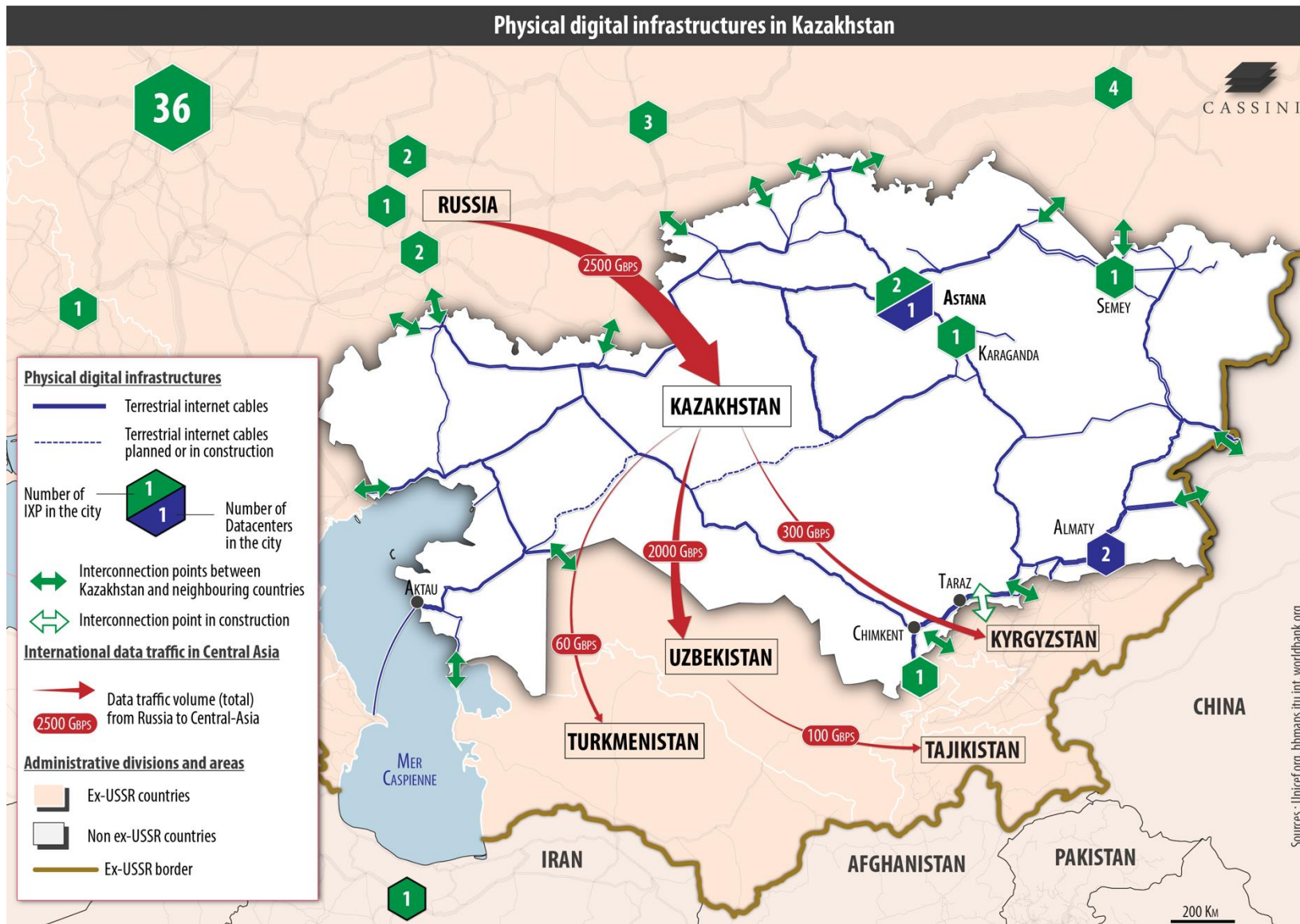


11 December  
2024

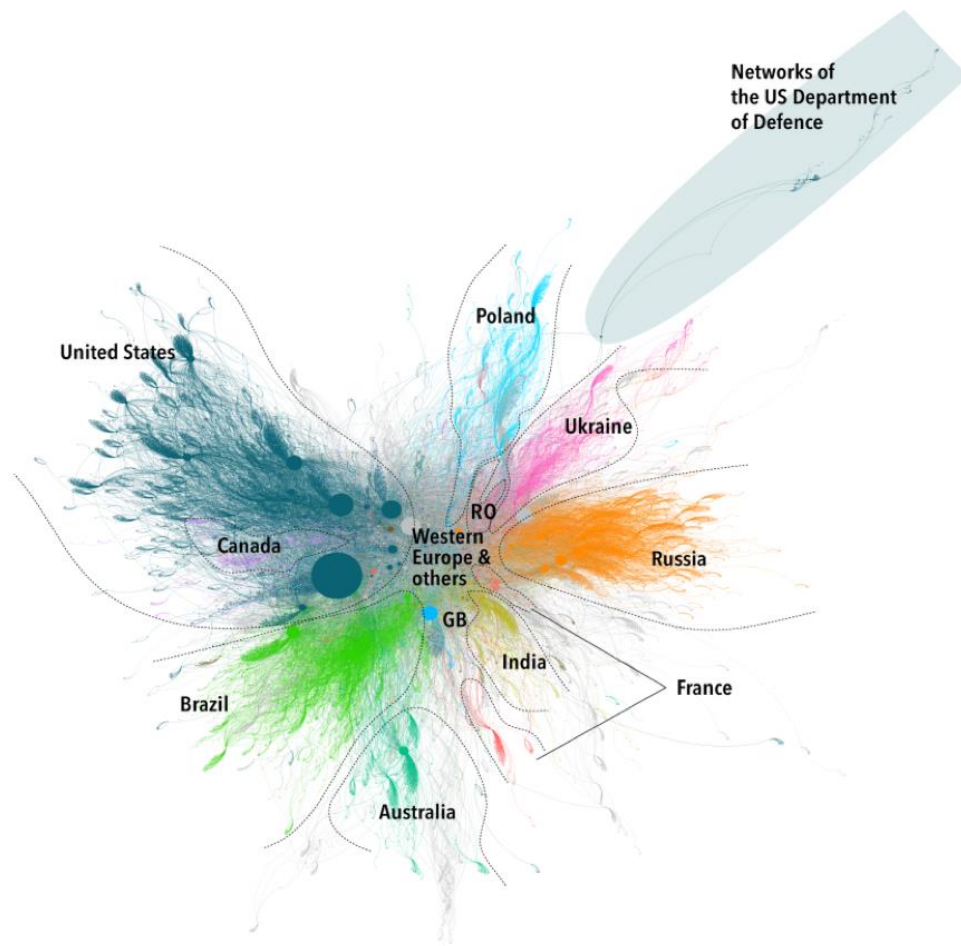
- **Cassini** is a consultancy specialized in geopolitical analysis and cartography, including the cartography of digital networks.
- It is the **spin-off the GEODE research project**, hosted at the **Paris 8 University**.
- GEODE stands for “Geopolitics of the Datasphere”; it is a **European Research Council-funded research project** aiming at understanding how geopolitical conflicts impact the routes data take within the Internet.
- A **transdisciplinary approach** combining network measurements (BGP; traceroutes etc.) and qualitative interviews on the field.
- Previous work done on Internet resilience in Pakistan (AINTEC 2024), on censorship in Iran, the war in Ukraine etc.

A research project on the geopolitics of Kazakhstan's Internet connectivity with Amreesh Phokeer, Romain Fontugne & Kévin Vermeulen.

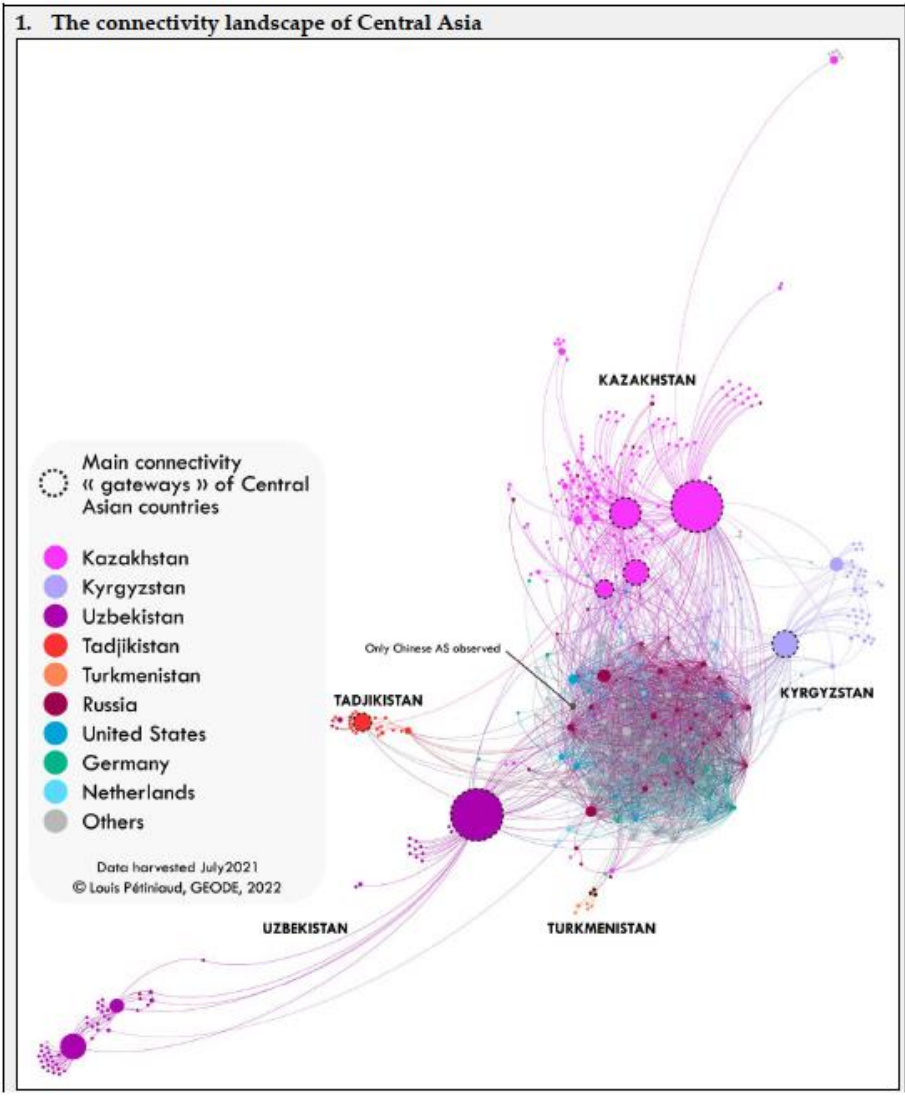
- ❖ **Is Kazakhstan's Internet resilient?**
- ❖ **How does Kazakhstan connect to the global Internet?  
Does it have any strategic dependencies?**
- ❖ **How does its socio-political context impact the shape of its network?**
- ❖ **How can the current geopolitical frictions in the region impact Kazakhstan's access to the Internet?**



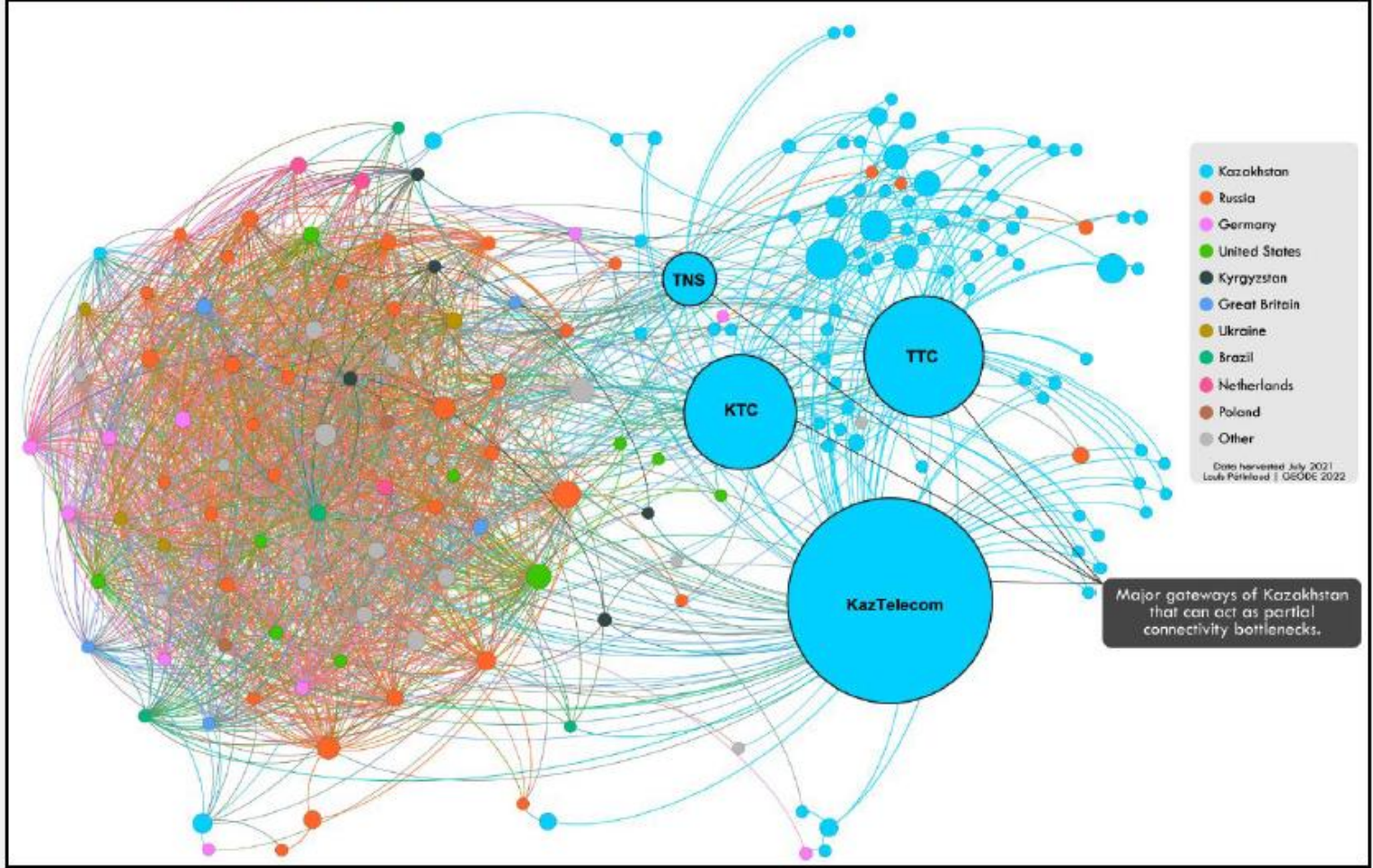
- We collect BGP announcements from our own-platform Crystal (combining RIPE Atlas and RouteViews data).
- We then apply visualization algorithms (Force Atlas 2) to these data to conduct a spatialized analysis of connectivity.
- Our tool enable us to compare the networks' evolutions in time.
- We can select a specific country or region within the graph.



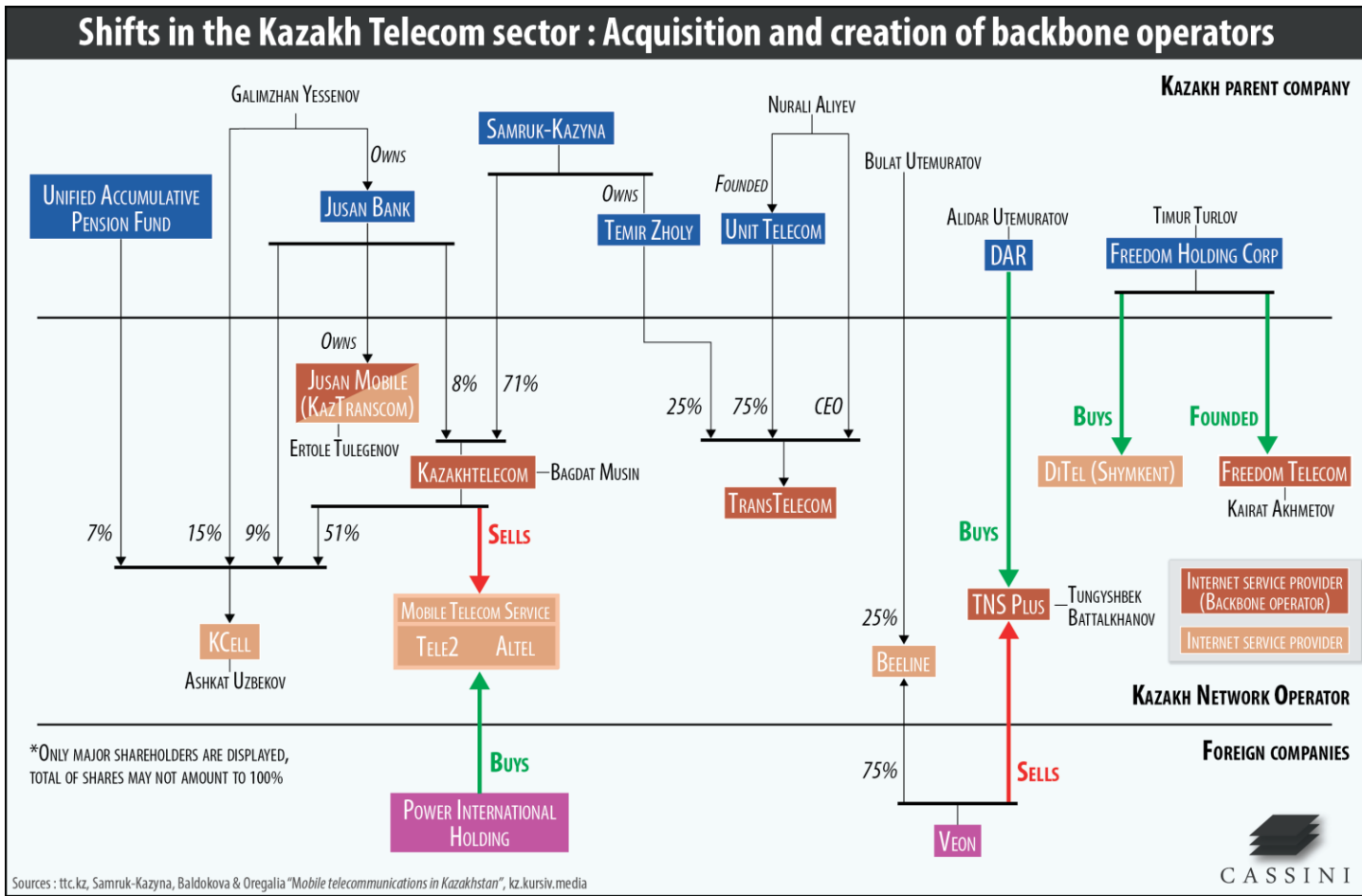
A full graph of all-registered Ases as observed in 2018.



## 6. Connectivity graph of Kazakhstan



- After having identified the main networks of interests we proceed with open-source investigations and qualitative interviews when possible.





- A complementary approach to this mapping of physical, logical and socio-political networks is, to conduct active network measurement (RIPE Atlas).
- Especially when we try to gauge:
  - the actual routes taken by data within the Internet the amount of traffic exchanges over the identified paths
  - the location of the contents of interest in a given region

## **Great platforms are also openly accessible with plenty of interesting data :**

- Internet Health Report ([ihr.iijlab.net](http://ihr.iijlab.net))
- ISOC Pulse Resilience Metrics
- Internet Yellow Pages etc.

Thank you for your attention,

If you want to reach out please do not hesitate :

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Please also connect to GEODE's website : **[geode.science](http://geode.science)**