



RINIP

Educação, Pesquisa
e Inovação em Rede

RNP UPDATES

SA3CC 2024

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RNP

RNP – Brazilian Academic Network

- Non-profit private association
- Funded by a inter Ministry program
- **1,800 customer sites connected**
- 180k researchers
- 4k postgraduate programs
- 4M end users
- **15.000 km of fibers illuminated in own DWDM**
- More than 20.000 km by 2026



<https://www.rnp.br/en>



PAIS – Sustainable Integrated Amazon Program



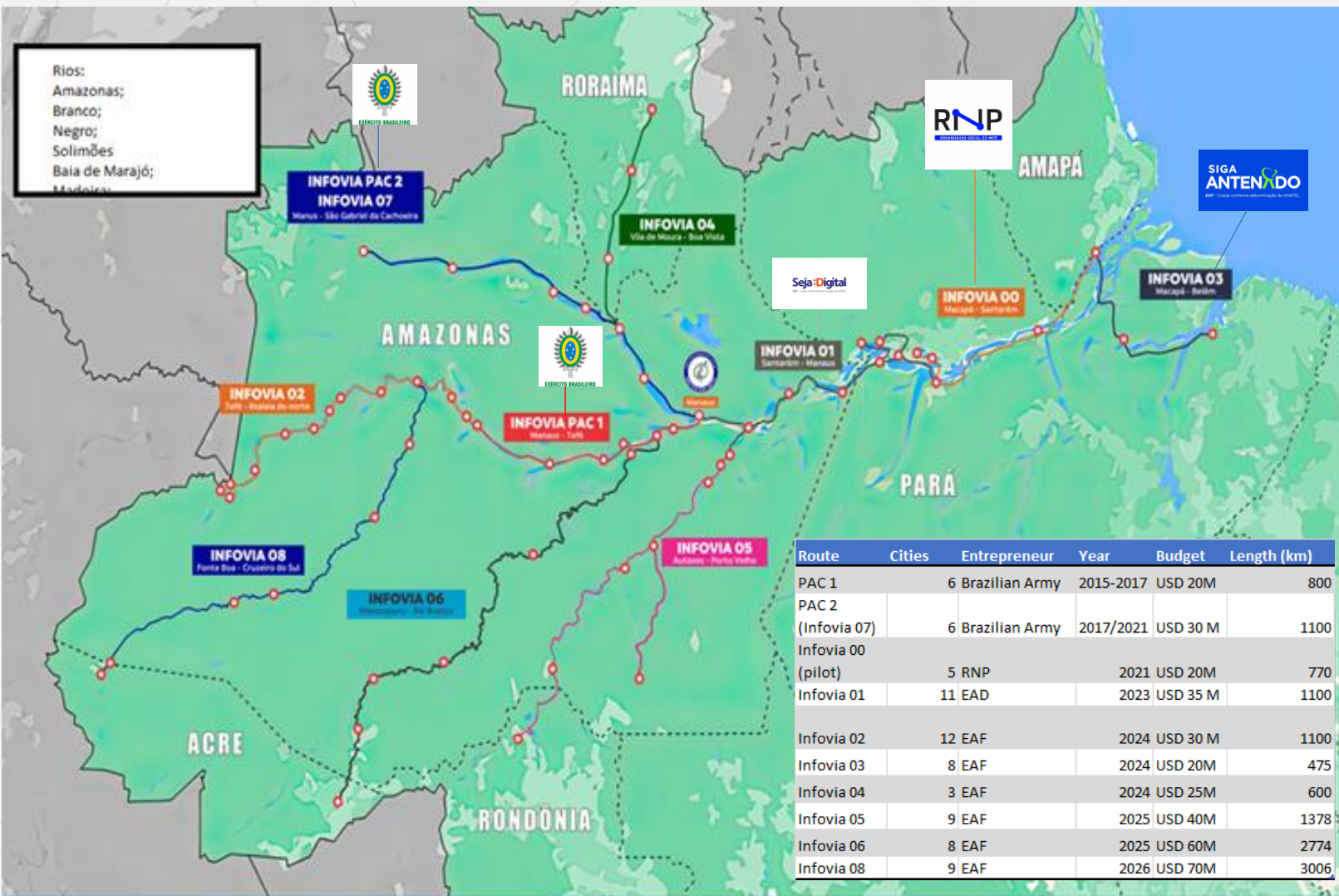
Created by the Ministry of Communications (MCOM) with the mission of expanding communications infrastructure in the Amazon Region.

Through the implementation of a fiber optic backbone under the rivers of the Amazon region.

RNP launched the pilot project, Infovia 00, which connects five cities: Macapá, Almeirim, Monte Alegre, Alenquer and Santarém. Infovia 00 was the first among the eight infoways in the program.

In this Pilot was created the Neutral Operator model for the program - Infrastructure Sustainability Model

PAIS - Sustainable Integrated Amazon Program



USD 350M



10 M



77 Cities



2015 - 2026



12,000 km

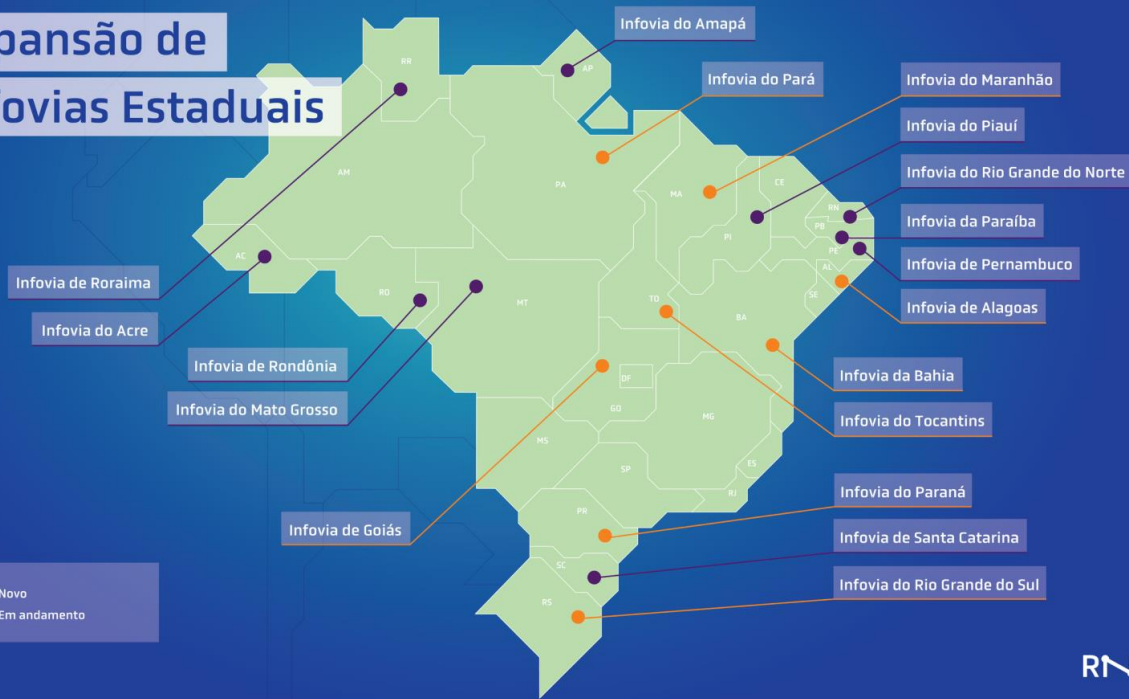


68 M trees preserved

- DWDM System - Initial 400G and up to 8Tb/s
- 48 Fibers on the Subriver cable

Conecta Program - 2024~2026

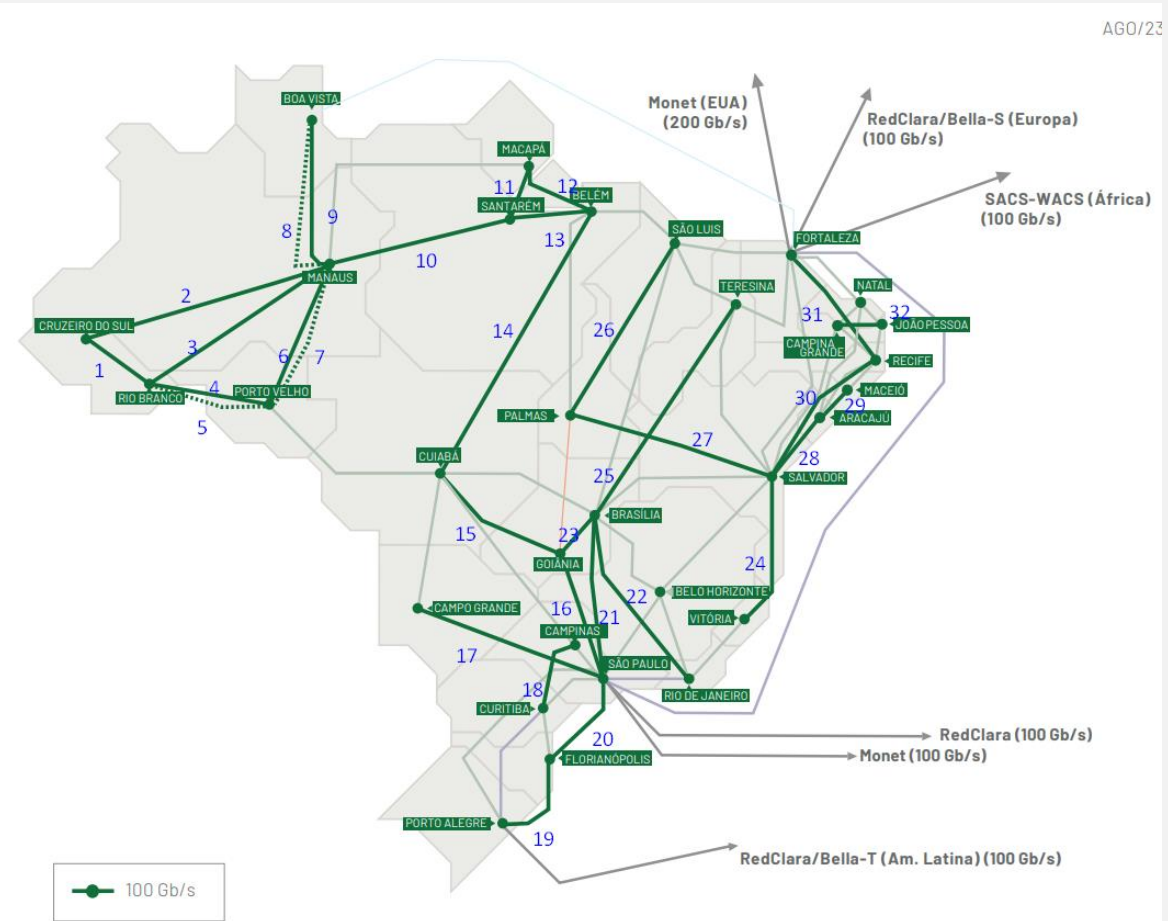
Expansão de Infovias Estaduais



Build a **network** throughout 18 states, 8 of them planned to be operational by 2026.

40,000 kilometers of fibers, 20.000 km by 2026

Deployment of 79 new metro networks



32 new $\geq 100G$ backbone links for the Rede Ipê

New IP/MPLS equipment in all RNP PoPs (>30 sites)

Modernization of 9 RNP PoPs in terms of datacenter infrastructure

Expansão de Infovias Estaduais e Nacionais

PAIS

Infovia do Amapá

Infovia do Pará

Infovia do Maranhão

Infovia do Piauí

Infovia do Rio Grande do Norte

Infovia da Paraíba

Infovia de Pernambuco

Infovia de Alagoas

Infovia de Roraima

Infovia do Acre

Infovia de Rondônia

Infovia do Mato Grosso

Infovia da Bahia

Infovia do Tocantins

Infovia do Paraná

Infovia de Santa Catarina

Infovia do Rio Grande do Sul

Infovia de Goiás

- Acesso para as Infovias Subfluviais
- Rota Subfluvial
- Rede Metropolitana a ser Implantada
- Rota Terrestre – Parceria com Provedores
- Rede Metropolitana Implantada
- Rota OPGW – Parceria com Elétricas
- Pops RNP
- Novo
- Em andamento

Rede de e-Ciência (RNP's e-Science Network)



Specific services for e-science (e.g. Science DMZ - DTNs)

+12 customers
connected by 2026

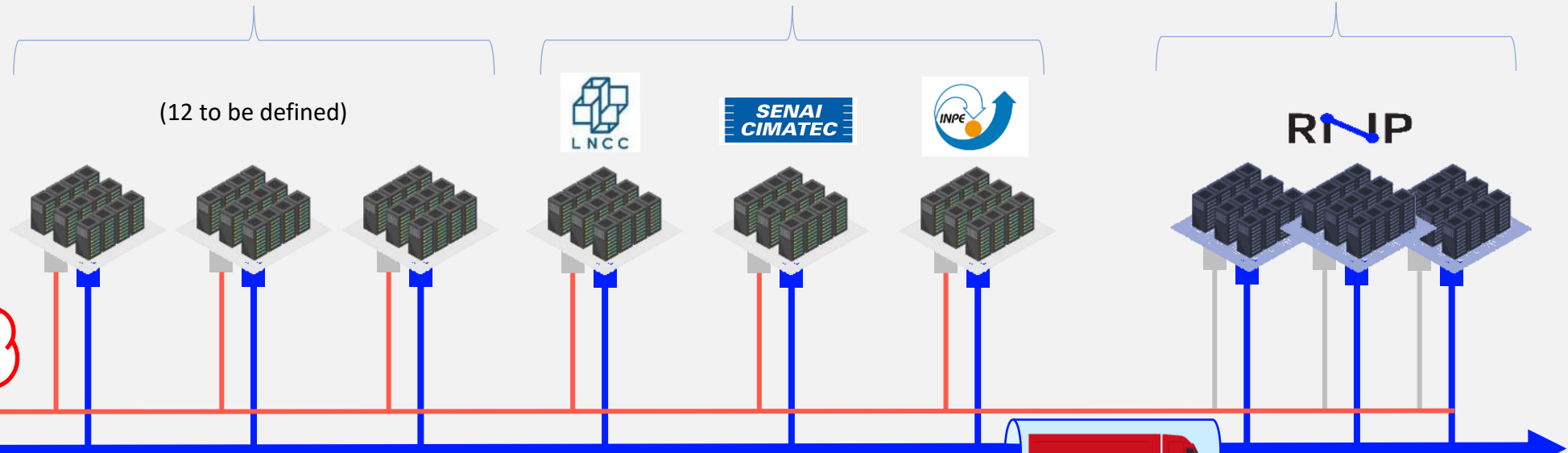
3 first high performance computer centers
(connection in progress)

CND RNP – Centro Nacional de Dados

(12 to be defined)



RIP



High performance network optimized for scientific (elephant) flows

100Gbps
400Gbps

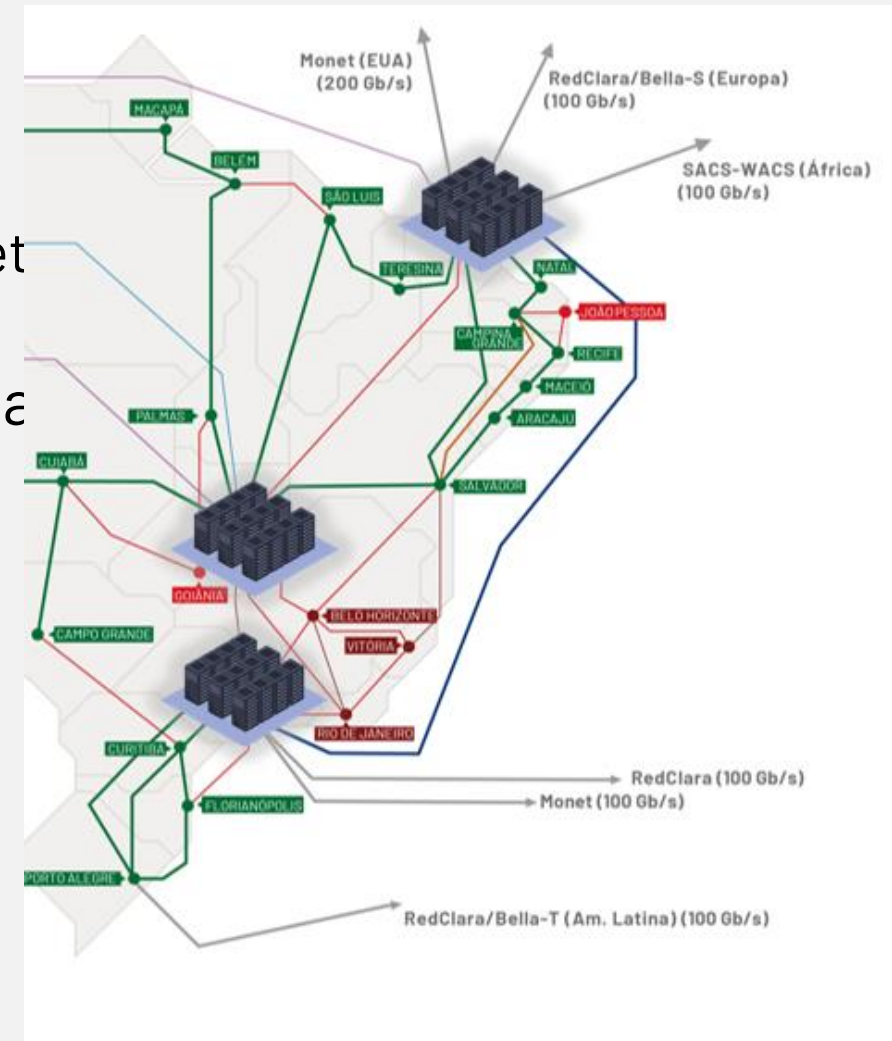
High capacity
High performance
Scalable n x100Gbps



Monitored 24x7 by RNP SOC and NOC

Centros Nacionais de Dados (CND)

- CND **enables new services for the academic and research institutions:**
 - *Colocation (including HPC, if demanded)*
 - Archive site:
 - Business continuity (eg.: *backup off-site*)
 - Data results from from research, simulations, et
 - Cloud services
- Integrated to both “Rede Ipê” and “Rede de e-Ciência”



International connections

- Partnership with academic initiatives:
 - Bella (RedCLARA + Geánt)
 - AmLight
- Points of connections:
 - Fortaleza – RedCLARA (Bella-S) + AmLight
 - São Paulo – RedCLARA + AmLight
 - Porto Alegre – RedCLARA
- Dark fibers:
 - Fortaleza: connecting important sites (TiSparkle, Telxius, Angola Cables)
 - São Paulo: connecting Equinix SP2, SP4, NIC.br datacenters
- Planning Monet capacity upgrade in collaboration with FIU





RI  **IP**

OUR BUSINESS IS
MORE THAN CONNECTIVITY.
IT'S CONNECTION.

Educação, Pesquisa
e Inovação em Rede

THANK YOU!



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E INOVAÇÃO

