Connecting the Amazon
Michel Zalis

During an operation for seizing an illegal mining pit in the Yanomami (1) indigenous land in the Amazon Rain Forest, Brazilian environmental agents founded Starlink's internet units, (2) a crucial tool for the logistics of violent practices of deforestation and extractivism. There was an effort from ex-president Jair Bolsonaro and his kakistocratic cohort to integrate Elon Musk's infrastructure into the federal program «Amazonia Conectada», a public endeavour helmed by Brazil's military forces to extend the internet infrastructure for the inhabitants of the planet's largest forests. As an alternative internet access to the existing broadband network, and even not yet officially part of the federal program, Starlink technology of Low Orbits Satellites is already entangled in the soundscape of the forest.

«Amazonia Conectada» started in 2015 to connect military units scattered in the Brazilian Amazon Rain Forest, expand and improve the territory's surveillance, and use this infrastructure to give internet access to the local population. Until 2021, the army installed 620 km of sub-fluvial optical fibre cables under the Rivers Solimões and Negro. Amazonian rivers have different meanings for forest inhabitants: its streams, banks, igarapés and igapos give life to enormous biodiversity, it is a way to commute inside the forest, it is a place where one can find food, it is a cosmological entity, «living beings who have always inhabited the worlds in different forms», (3) it regulates a planetary hydrological cycle. Further, Amazonian rivers bear the burden of chemical pollutants from mining activities. Adding to it, the world's largest watershed is now a basin for broadband infrastructure, in which data coming from all over the globe gradually lands in coastal and indigenous villages along the rivers, giving them access to digital information.

In the same way that the start of sub-oceanic optical fibre cables followed the path of telegraph routes that linked Europe to North America, the sub-fluvial cables from «Amazonia Conectada» reimagine telegraph cables installed in the 19th century by The English company Siemens Brothers. (4) Finished in 1895, the Amazon River Cable was used to connect the telegraph network to Manaus, which was, at that moment, the centre of rubber extraction and production in the world. This interest in rubber extraction in the Amazon was responsible for smuggling 70,000 seeds of «Hevea brasiliensis», the rubber tree that was taken to Malaysia after its sprout in London's Kew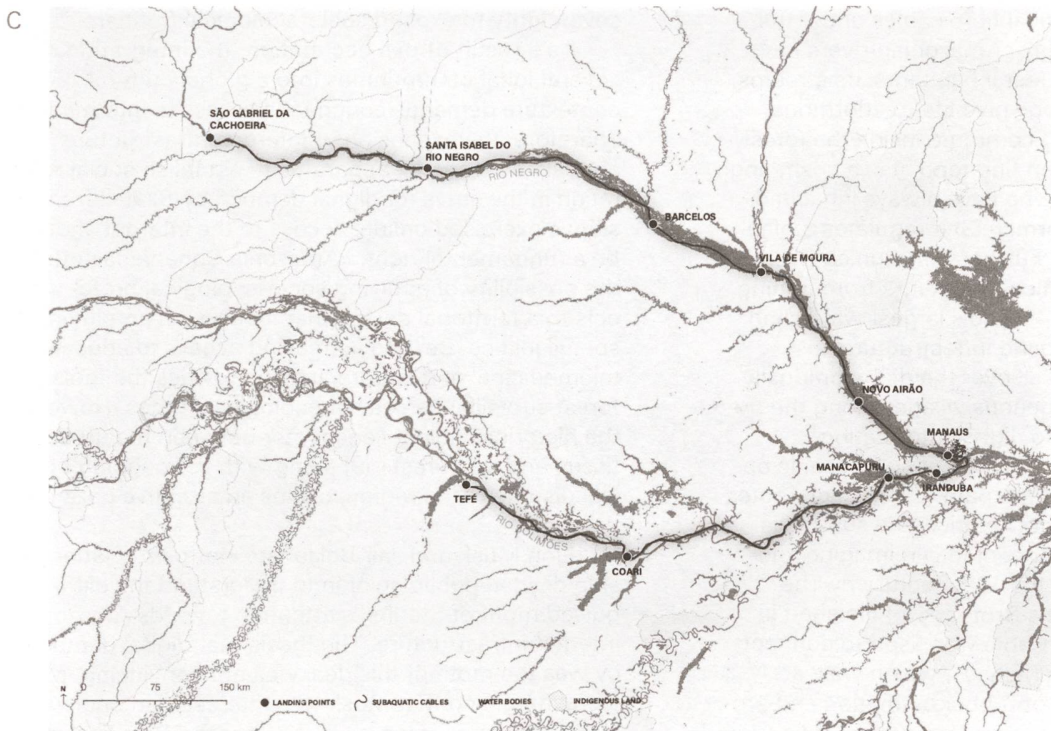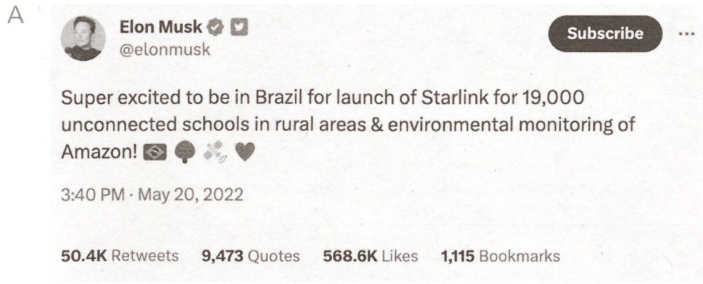 Gardens. As a result, the upcoming Malaysian rubber production dominated the global market, causing Brazil's rubber cycle to end. (5) As if the seeds of Brazilian rubber trees, Siemens' subaquatic cables and the Malaysian economy were part of the same metabolic proliferation of global colonisation.

During the second half of the 20th century, infrastructure penetration in the Amazon Rain Forest was at the core of an inner colonisation project led by the Brazilian military government. The perspective of the forest as wasteland guided the construction of highways and «modern enclaves» (6) to attract new migrants from several parts of Brazil to occupy the «emptiness» of the forest – an assumption that existing living beings inhabiting the forest were part of a wilderness to be conquered. As a superimposition of modernist cartography into the dense organism of a forest, «roads were designed as lines of occupation as well as channels through which modernisation would inflate the undomesticated interior». (7) It was a territorial design of extended urbanisation that used the discourse of national integrity and infrastructure sovereignty to expand socio-ecological frontiers.

As a result of this occupation, the integration of several local communities into a global cultural contexture demands continuous access to information. Therefore, the expansion of Internet infrastructure appears as a crucial apparatus to establish social reparation in the strive for digital democracy (8): If citizenship is exercised online, access to the internet should be a fundamental right. «Amazonia Conectada» offers the possibility of applying socio-ecological protocols to a territorial design that focuses on amplifying spatial justice. Beyond increasing access to education, telemedicine, and culture, it also provides the tools for forest surveillance against ecological crimes. However, the historical violent «encounter between the urban tissue and the forest», (9) along with the ongoing political dispute in the region, claims an attentive gaze on the topic.

Elon Musk and Jair Bolsonaro's offbeat relationship divided public opinion to understand the disguised motif of Starlink's attention towards Amazonian internet infrastructure. The thesis that digital democracy was the motif of this deal was not convincing. Many were imagining that Musk was interested in undiscovered lithium reserves in the Amazon Rain Forest, others were imagining Bolsonaro as a possible far-right ally in the global political and digital landscape. It can be both, guessing that the four years of Bolsonaro's government was, among many others, a complete

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A   Elon Musk tweets after the reunion with Bolsonaro for the Connecting the Amazon deal. Image: Twitter @elonmusk, 20 May 2022

B   nstallation of the sub-fluvial cables in the Negro River. Image: Science and Technology Department from the Brazilian Army (DCT)

C   Map of existing situation of «Amazonia Conectada» Subaquatic Cables. Collage: by the author

ecological disaster. Between 2019–2022 environmental agencies of protection were dismantled, which was seen as a «carte blanche» for expanding deforestation, illegal mining, and irregular wood extraction. For instance, in four years, the planet lost an area of tropical forest of the size of approximately three-quarters of Switzerland to those who desecrate nature. (10) It was a call to replace the trees with cows, the complexity of the largest forest on earth with the biodiversity desert of pastures.

Starlink technology was advertised as an ecological alternative for the existing project of sub-fluvial cables, arguably harmful to the riverbanks. Still, there is no research measuring this ecological impact yet. However, comparing the most suitable internet infrastructure for the region brings crucial conversations to the table. (11) The receptors, linked to satellites spread in earth orbit, are cheaper, faster to install and have the flexibility of movement – they are portable objects. However, dense agglomerations of trees and heavy tropical rain, a regular phenomenon in the wet and humid Amazonian ecosystem, can interfere with the stability of the network – the rainwater and the internet come from the same sky. Further, satellite receptors have a lifespan of about five years and are only managed by the specific person who controls the technology in an app. In contrast, sub-fluvial cables are publicly owned, being part of a collective internet access policy. It has decades of durability and, when ready, brings a high-quality connection to a large number of people. But there are high maintenance costs, it takes years to install, and it can impact the dynamics of ecological systems and the appearance of landscapes.

This comparison between performative and visual features of cable and satellite infrastructure is essential for demystifying the idea of the internet as an «omnipresent, ephemeral, everywhere and nowhere» (12) entity and therefore moving towards the revelation of Data Centres, Subaquatic cables, Landing Stations, Satellites, and other artefacts that make up this planetary and extra planetary-scale infrastructure. These «Stuff you can kick» (13) plays a fundamental role in the economic, socio-technical, and socio-ecological processes of the geographies in which they are rooted, revealing themselves as prominent articulators of urbanisation processes that are reshaping planetary geopolitics. It is necessary to wait a few more years to analyse the scale of impact of those technologies on the territory, however, the penetration of the internet infrastructure into the Amazon Rain Forest can be a crucial case to imagine an urbanisation process that happens beyond the city. (14)

Connecting the Amazon is not only a slogan for internet access but also an infiltration process into the Amazonian territory of a planetary fabric loaded with materiality, story, and disposition. (15) It is an emerging horizontal condition (16) of information distribution that connects the forest to the planet. What is possible to assume as a paradoxical soundscape of digital democracy: Internet infrastructure ended up as a communication device for illegal activity of nature extraction. At the same time, the extensive spread of infrastructure can be seen as an enhancement of rights, being a crucial apparatus for environmental justice and giving voice to the people of the forest and to the colossal biodiversity under pressure. In this way, the striving for the Amazon preservation must be recognised not only as vital for the survival of the planet but also as a dynamic and complex ecosystem of local communities of different species, where the relationship between humans, non-humans, and more-than-humans must establish common grounds.

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