
Return
An Investigation Into Amazon's Return Infrastructure

work **hard**. have **fun**. make **history**.

Return

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Declaration of Originality
I hereby declare that this work has been produced independently and no other than the specified resources have been used.
Quotations have been marked as such.

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Abstract

Return is a research project designed for the experimental disclosure and artistic investigation of Amazon's return infrastructure. Most of the diffuse infrastructure of the company remains hidden from the everyday consumer - and even for the critical observer. Apart from huge Amazon warehouses located in more rural areas, which can sometimes be spotted when travelling along motorways, the process behind those physical occurrences remains veiled. Occasionally, by looking closely, one can recognise the mostly anonymous parcel delivery services that move in white, unlabelled vans in urban areas. A major part of Amazon's services are outsourced to third party companies, making it hard to track down the course of action and operation of the multinational company. The incentive of this work is to dissolve these roles and reveal the spatial workings of the company.

The intervention uses GPS trackers ordered from Amazon, that have been charged and powered, while directly initiating the return process. Through the proxy API of the GPS device's manufacturer, it was possible to track Amazon's return infrastructure for roughly 30-60 days. *Return* looks at the routes travelled by the trackers and the spaces they pass through to situate them in a context of precarious logistical labour and automating technologies. The primary focus here is on the tension between precise local positions and a global logistical system, which has a decisive influence of a political dimension on the spaces and labouring bodies involved.

The Company

The target of this investigation is Amazon – one of the biggest multinational technology companies in the world. Within the last decades Amazon has strived to become a leader in the contemporary world market by availing technological innovation, resorting to principles of mass scaling and devising techniques for the collection of big data. The observation of the physical infrastructure in the return process is only a tiny entry point into the otherwise hidden world of the tech giant, which – through its economic activities – shapes our society, labour and environment on a political scale.

Amazon is known to have a voracious thirst for personal data in order to use it in the subsequent process to improve its own services and thus to capitalise on the recorded behaviour of its users. This mass collection of data takes place at all possible points where user data is generated.[1] Whether it is easily collectable data such as the recording of behaviour on the *Amazon Marketplace* website or the invention of physical products that enable data collection – such as the voice assistant *Amazon Alexa*. We even voluntarily acquire the latter devices as practical gadgets, thereby enabling Amazon to consensually fill our personal profile with more and more precise data. The possession of large amounts of data in a profit driven capitalist system provides control over the data-generating subjects. At Amazon, this not only applies to the voluntary users of the services and products, but also extends to the monitoring and control of the workers employed at Amazon. In the field of logistics, technologies are used to collect data about the processes in order to make them more effective. More effective in this respect means increased productivity, often at the expense of the workers. For example, an Amazon patent suggests that work clothes could be fitted with RFID chips to prevent workers from colliding with automated robots.[2] This localisation technology, however, allows for an exact spatial localisation of the workers and can thus also precisely document their whereabouts and break times. The truck drivers involved in the returns process are also under constant surveillance by localisation devices. In the argumentation of the companies the application of GPS systems in trucks aim to improve eco-friendliness and increase productivity through effective routing. Regardless of this, however, the systems also provide a very transparent form of monitoring of employers over their employees.[3] "Time-based technology allows employers to access continuous, up-to-the-minute data on vehicle speed, rpm and route reportage, as well as the timestamps for arrivals and departures. This means that employers can supervise where and how the drivers are driving."[4] The companies are thus able to permanently retrieve the status of their workers and vehicles, not just the current status but also any past activity. In a context where work processes are centrally controlled and managed by logistical software and artificial factors are used to measure productivity, the use of technologies such as these provides a great means of control.

[1] Shoshana Zuboff, "The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power" (London: Profile Books Ltd, 2019), 267-268.

[2] Amazon Technologies Inc, "Systems and methods to facilitate human/robot interaction" U.S. Patent No. 9,588,519 (United States Patent and Trademark Office, 2016), 4.

[3] Anja Kanngieser "Tracking and Tracing: Geographies of Logistical Governance and Labouring Bodies," in Environment and Planning D: Society and Space 31, no. 4, 594-610, (2013), 604.

[4] Ibid.

Return aims to reverse this power imbalance between Amazon as a company and its users, as well as workers. This time it is them who collect data about the company's processes and make it available to the general public. This does not prevent the collection of data and the resulting possibilities of control by Amazon, but it does create a counter-narrative using subversive methods. Just as Amazon collects data in order to be able to intervene (i.e. increase productivity), revealing the precise processes of the logistical infrastructure opens up first possibilities for social intervention and develops a collective consciousness of the underlying structures.

figure 01: Amazon BTS2 lined up microwaves for heating food.

The Method

To get data from Amazon's return process, the method on use can best be described with an exploit – a term coined by Galloway and Thacker in their 2007 book "The Exploit: A Theory of Networks"[5]. It can be seen as a way to gain information from or attack networks. The exploit on use neither harms anyone nor does it cause direct damage to any instance of the company. All it does is use existing infrastructure in order to gain access to the spatial workings of Amazon return processes. The following chapter will roughly describe the method in use. The exploit uses simple GPS trackers that use geolocation to permanently send their location to a software portal.

As the first step, simple GPS devices were ordered via Amazon. There are plenty ready-to-use versions out there that already include a pre-registered SIM card and access to the software portal of a company to track the device's location. The trackers used were devices from the German companies *PAJ GPS* and *Salind UG*. Both companies are located in Windeck and use the *PAJ GPS Finder Portal* to access the data.[6] Once the tracker arrived, it was fully charged by the person that ordered the device and later registered by me in the software portal of the company. After gaining access to the location data, the return process was initiated at Amazon. When the return process was accepted, the tracker had been packed back into the parcel, everything came in and the journey began. From that point on it was possible to access precise spatial movements of the return, as long as the battery lasted.

The research project is limited to the logistic infrastructure within the European continent, to make a spatial delimitation that allows more precise conclusions to be drawn from the collected data. The starting points of the first returns were the Federal Republic of Germany, but the data collected here was supplemented by more trackers from other European countries. Return is an ongoing research project which will be complemented by further data in the future, with the aim of revealing more and more structures of the underlying logistical processes. In the following text, the generated data will be documented and contextualised to give insights about the occurring events during this journey and what they mean in a complex system of logistical organisation by a multinational company.

A website[7] serves as the basis for the observations, on which the movements of the trackers can be observed in real time. "Return Live" complements this medium with a physical exhibition that links the local and global components. It enables the viewer to create a direct link to the trackers location and puts an emphasis on the associated localities and the workers that inherit them. What started with 3 Trackers from Cologne expanded through a few more European cities to gain more information and to validate the data. So far 7 trackers have been sent out. 116376, 116381, 116904 are the initial trackers starting from Cologne. 141569 is a tracker from Berlin and 154662 is a tracker with more battery power also starting from Cologne.

[5] Alexander R. Galloway and Eugene Thacker, "The Exploit: A Theory of Networks" (Minneapolis: University of Minnesota Press, 2007).

[6] https://www.finder-portal.com.

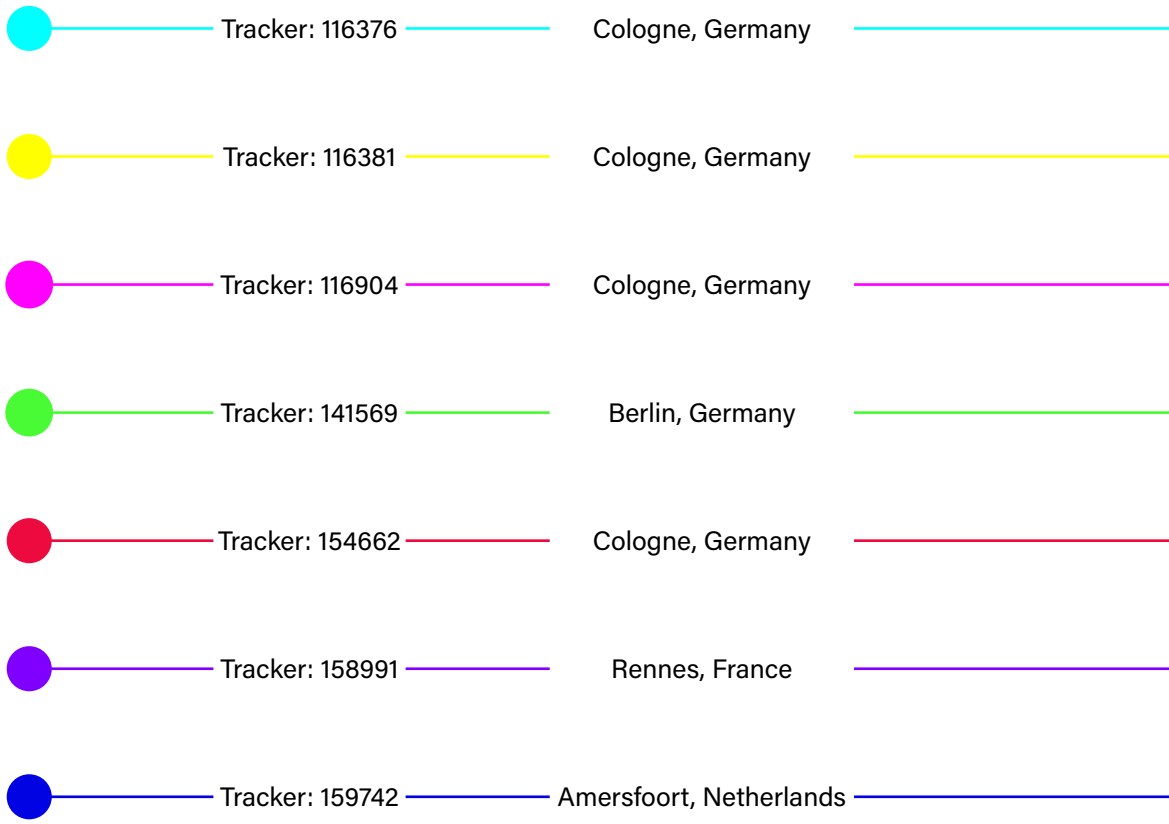
[7] https://return.gruppe5.org.

Part of the project has been a small open call to gain more information from other European countries. The preliminary research showed that there are only two Amazon returns centres in Europe, so it was of particular interest to find out what happens to trackers from other European countries. Especially, when the delivery distances become even longer. Amazon maintains its own domain in only 8 European countries.[8] From other countries, products have to be ordered via the domain of another country, sometimes with extra shipping costs. However, these respective Amazon marketplaces have a different product range. Accordingly the basis for the open call was an exploration of different supported trackers and their availability on the respective Amazon marketplaces. A corresponding web page for the open call[9] issues information about the project, lists the supported trackers and explains the procedure in short steps. Through sharing the open call on Twitter[10], it was possible to get additional tracker data (158991, 159742) from the Netherlands and France. The observations recorded by these trackers do not differ in any significant way from the observations of the trackers previously sent from Germany.

[8] Germany, UK, France, Netherlands, Italy, Spain, Sweden, Turkey.

[9] https://return.gruppe5.org/opencall.

[10] https://twitter.com/kjell_xvx/status/1522615197923430402?s=20&t=XWwgYDF18uexgcamZ2fHtg.



The Flow

The following is to be considered a generalised summary of the observations, which can be traced in detail on the project website. All trackers start their journey at their individual drop-off point as a collection point for the local shipping companies. Those are located in the urban area, not far from the place the tracker had been ordered to. From there, the trackers pass through various shipping centres of different shipping and logistics companies. In France and the Netherlands, one of these warehouses can be assigned to Amazon before the tracker even leaves the country. However, most of the other stops can be assigned to subcontractors or are infrastructure of the corresponding shipping companies. After passing these intermediate stops for sorting, all trackers always move on motorways very directly towards the east/southeast. On this longest route of the journey, the trackers stop at various points of infrastructural supply such as petrol stations, motorway services and parking bays. Eventually all trackers arrive at the Amazon returns warehouse *Amazon BTS2* in the southwest of Slovakia. After the trackers have spent some time there (1-6 days), the trackers move north on different paths and pass through different logistics buildings of Amazon or logistic subcontractors such as 'Cewe Logistics' and 'Kuehne + Nagel (AG & Co.) KG.' The final destinations of the trackers still remain unclear, because so far in every case the battery died after some time and therefore the signal suddenly stopped being transmitted. Overall it could be documented that the trackers, after being processed at *Amazon BTS2*, moved to Poland for further sorting and then back to Germany. Tracker 141569 from Berlin could be located near Düsseldorf before the battery died. Tracker 154662 from Cologne suddenly reappeared in an Amazon centre near Koblenz after the signal had been interrupted for some time. The very straight long lines visible on the map are caused by signal interruptions of the trackers. These occur, for example, when the tracker is so strongly surrounded and shielded by other goods during transportation that it can no longer transmit or receive a signal. In this case, the last point before the signal interruption and the first point when contact is re-established are simply connected.

In conclusion, it can be documented that all trackers move to Eastern Europe with various intermediate stops and meet there in a central node of the Amazon returns infrastructure. The Amazon returns centre *Amazon BTS2* handles all of the returns operated within the scope of this project and is therefore of particular importance.

What actually happens to the trackers remains an open question which could not be answered yet. Three possible options emerge from the research on Amazon. Option number one is that the trackers are tested for functionality in the Amazon warehouses and are thus prepared to be sold again. Another option is that Amazon hands the trackers back to the company that sold them via *Amazon Marketplace*, i.e. PAJ GPS / Salind UG. The last option is that Amazon makes use of the so-called 'FBA Liquidations programme'[11], which is intended to collect large quantities of returned goods on pallets to sell or auction them to third-party companies.

[11] Amazon Seller Central, "FBA Liquidations." https://sellercentral.amazon.com/gp/help/external/GYVCG5Q3BEJ6MLMF

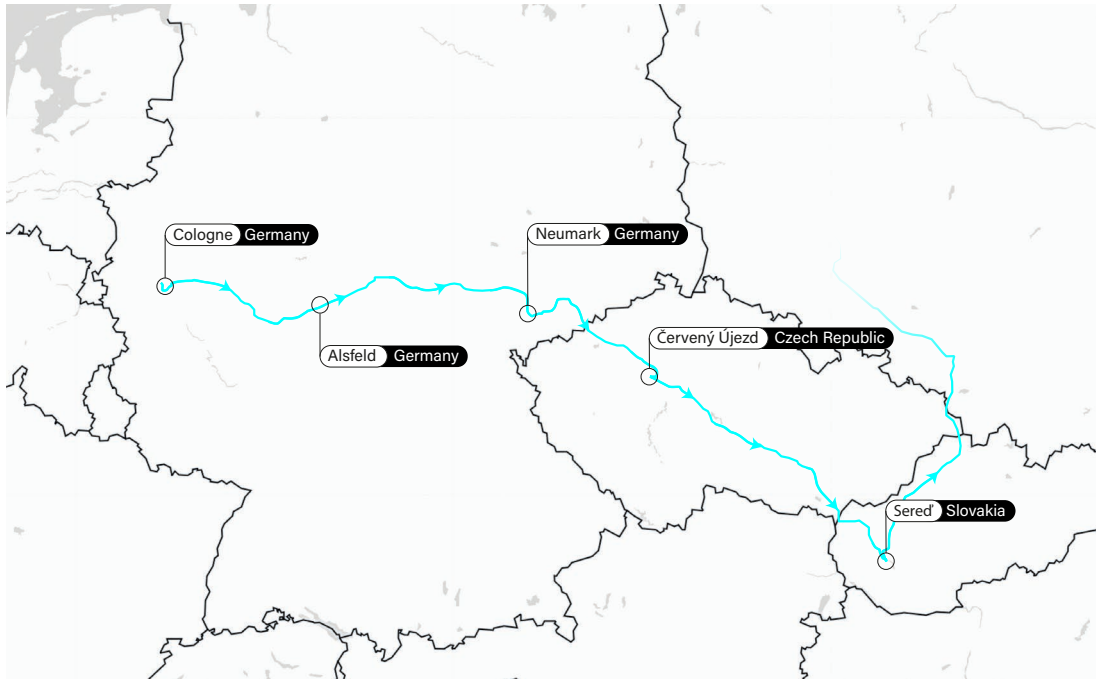


figure 02: tracker 116376: example route with stops.

RETURN

ABOUT

Return is a research project designed for the experimental disclosure and artistic investigation of Amazon's return infrastructure. Most of the diffuse infrastructure of the company remains hidden for the everyday consumer - and even for the critical observer. Apart from huge Amazon warehouses located in more rural areas, which can sometimes be perceived when travelling along motorways, the processes behind those physical instances remain veiled. Occasionally, by looking closely, one can recognise the mostly anonymous parcel delivery services that move in white, unlabelled vans in urban areas. Most of Amazon's services are outsourced to third party companies, making it hard to track down the course of action and operation of the multinational company. The incentive of the work is to dissolve these roles and reveal the spatial workings of the company.

Within this intervention, we ordered GPS trackers from Amazon, charged and powered them on, while directly initiating the return process. Through the proxy API of the GPS device's manufacturer, we are able to track Amazon's infrastructure for roughly 40 days.

TRACKERS

116376 116381 116904 141569
154662 158991 159742

DISCOVERIES

AMAZON BTS2

926 01 Sereď Slovakia 48.2776, 17.70885

Amazon BTS2 is the central fulfilment centre that processes all returns from Europe. This is the centralised location

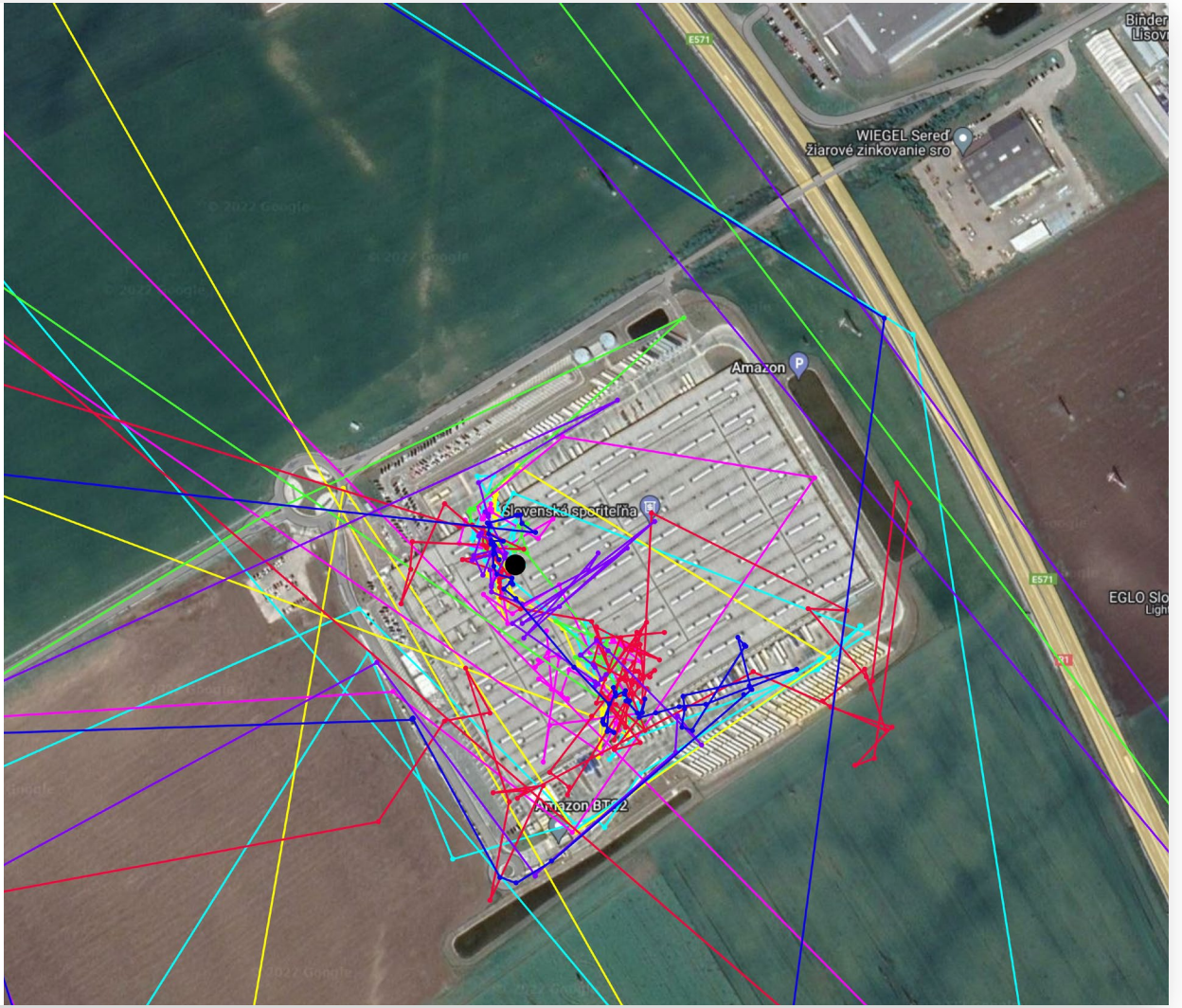
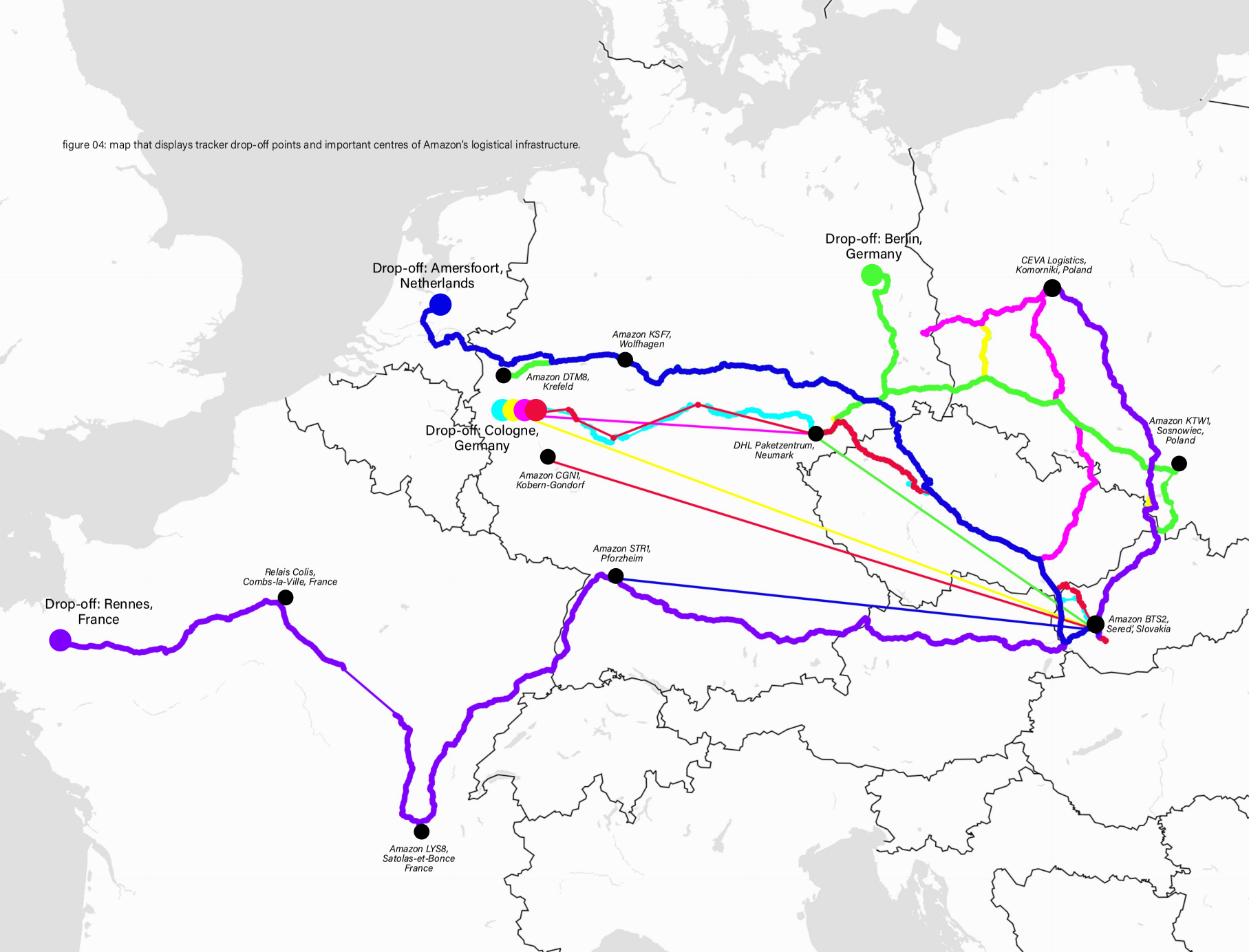


figure 03: website that displays project description, trackers, discoveries and map with movements.

figure 04: map that displays tracker drop-off points and important centres of Amazon's logistical infrastructure.



Interconnections

The Global

The observations made by sending back the trackers can be related to concrete global concepts of a capitalist-driven economy. Within the last few years, modern concepts of trade and economy have developed which are particularly effective in generating profit by optimising processes and services in a global accessible market. Amazon, as a multinational corporation, is positioning itself as a pioneer in these developments.

One of those concepts that has significantly shaped contemporary economic conditions is known under the name of 'platform capitalism'. The term has been comprehensively described and defined by the Canadian writer and academic Nick Srnicek in his eponymous publication in 2016.[12] An overall definition given in the work of Nick Srnicek is that platform capitalism holds a concept at the nature of the economy that is characterised by corporations providing platforms. They enable other economic actors to make use of the platforms by conducting their businesses on them. Corporations providing these platforms are usually described as 'tech companies' or at least originate from the era of the Silicon Valley based technological upturn rather frequently. They can also be described as a digital economy which refers to all those businesses that rely "upon information technology, data, and the internet for their business models"[13] This concept extends into supply chains and the logistical organisation of goods. The global supply chains of the last decades are also significantly shaped by companies that present themselves as 'platforms', Amazon being one of them.

Apart from this, a further discourse has been taking place in recent years which places global supply chains at the centre of economic discussion. Anna Tsing, a California based anthropologist, correspondingly defines 'supply chain capitalism' on the basis of the structural role of differences in the mobilisation of capital, labour and resources. Tsing argues that "diversity forms a part of the structure of capitalism rather than an inessential appendage."[14] This diversity becomes visible above all in the form of its exploitation, especially in relation to labour.[15] Achieving surplus value through 'diversity' is only possible in a globally networked world that also allows access to different bodies, spaces and forms of work. This trend can be confirmed by the findings observed in *Return*. A drive towards the east is evident in all shipped trackers. Global supply chains in this case enable the exploitation of labour in Eastern bloc low-wage countries. Amazon derives profits from low labour wages and poor labour protection regulations in the Czech Republic, Slovakia, and Poland.

The outsourcing and fragmentation of a task for different sub-contractors, which are controlled and organised via gigantic platforms, and the targeted exploitation of diversity in the form of capital, labour and resources creates a global network of impact which is reflected in the observed logistical infrastructure of the Amazon returns. The lines that are traced by

[12] Nick Srnicek and Laurent De Sutter, "Platform Capitalism" (Cambridge, UK; Malden MA: Polity Press, 2017).

[13] Ibid. 4.

[14] Anna Tsing, "Supply Chains and the Human Condition," in Rethinking Marxism 21, no. 2, 148-176, (2009), 150.

[15] Ibid. 150.

the trackers allow conclusions about the underlying economic principles. However, they do not only depict the underlying politics of economic conditions, but at the same time enable a very direct reference to the spaces in which the labour is carried out. These spaces are defined by the labour performed inside of them and are significantly shaped by their subjects – the workers – who perform the labour in them. No matter if this labour is of human, technical or symbiotic nature. *Return* reveals a global network of logistical infrastructure and opens up the possibility to relate this to very specific localities, bodies and technologies.

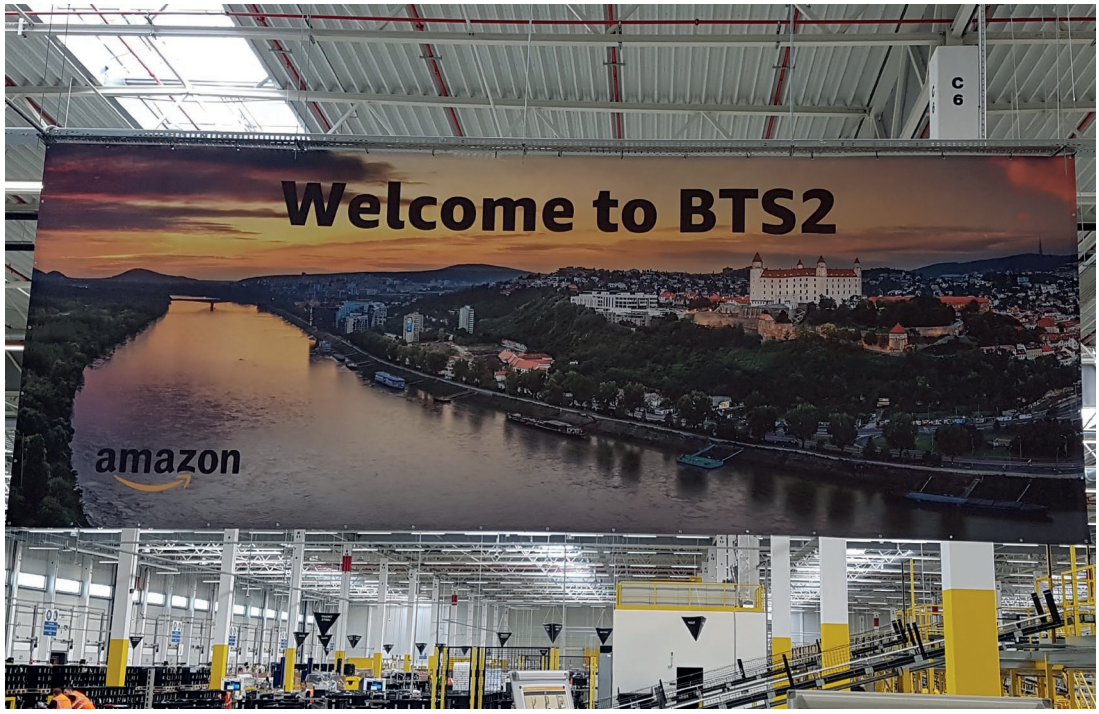


figure 05: welcome to Amazon BTS2.

figure 06: truckload of Amazon returns.

The Local

The global concepts of logistical organisation are contrasted with the local physical spaces which in their combination create the complex network of the logistical infrastructure. Local spaces can be categorised into different types of space. They all have a meaningful impact on the surrounding environment and the entities they are occupied by. This research classifies the locations documented by the trackers into three categories, each with different characteristics: the *inhabited space of transportation*, the *space of intermission* and the *space of reallocation*.

The *inhabited space of transportation* is mostly represented in the driver's cabin, that moves spatially across different roads into different cities and also across national borders. This space can never be seen from a satellite image and remains hidden for the observer. In "Gig-Raum und Projekt-Raum"[16] Dr. Harald Trapp describes the political impact the creation of spaces of this kind have in a platform driven economy. Trapp argues that the traditional shared and mostly fixed workplace is replaced by non-community, mobile and isolated employment. This comes with the elimination of the necessity to provide a physical workplace from an employer's side. For a worker, this means that the living space often becomes the working space and thus the place of production. Correspondingly, the street becomes a place of production.[17]

The *space of intermission* is characterised by the temporal absence of labour. Across the way, the trackers surpass and come to a halt at several rest stops. In the infrastructural chain of utilisation, these places arise out of necessity and thus embody a human part in the otherwise very artificial chain. The arrival at these places are conditioned by two entirely different factors, one unpredictable, one precisely regulated: human needs (rest, sleep, food provision and sanitary needs) on one hand. On the other hand, strict protocols for driving and rest periods that can be calculated from a defined point after departure. These places, which are directly connected to the motorways, are like small micro cities, lacking long term housing and residents. As a consequence, in this case, not only the street becomes the place of production, but the suburban space in-between becomes a sub-element of the logistical utilisation process. A lot of those spaces solely exist for the reason of long-distance traffic towards Eastern Europe, such as that generated by Amazon returns. Platform companies play a role in the creation of spaces like these, which are sometimes closed entities and differ from the commonly used rest areas. This utilisation of space takes these areas away from the general public of the village and utilises it as a part of the Amazon returns infrastructure.

The *space of reallocation* mostly occurs in the form of a warehouse or logistics sortation centre. The space itself is static, but it manages the movement of people and artefacts. Those *spaces of reallocation* are embedded in a socio-geographical spatial structure (city, village, etc.). What exactly happens

[16] Harald Trapp, "Gig-Raum und Projekt-Raum," in Informationen zur Raumentwicklung 46, no. 6 (2019).

[17] Ibid. 39-40.

in these halls remains hidden. For the time being, we have to regard these buildings as black boxes that give us no information about what is happening inside. We can only observe the input and output as well as a physical observation of the spatial conditions. In terms of building architecture, all these first stopovers are rectangular warehouses with loading ramps for trucks on at least 2 sides. The buildings are accessible all around and are located in the industrial areas of (sub)urban space, close proximity to motorways. From the accumulation of several trackers a few insights could be gained from one of the larger warehouses – *Amazon BTS2*. Due to the accuracy of the trackers and the enormous size of the warehouses, different zones can be located in this building. All trackers linger in relatively small-step movements in one area of the hall after arriving, then move relatively quickly to the opposite side and linger there again. These movement patterns suggest that there are organisational small-step processes involving machines and/or humans at the beginning and end, and that the centre of the warehouse is equipped with automated conveyor belts that quickly move the trackers from one side to the other.

With regard to the local places that can be found in the process of Amazon returns, some statements with a political dimension can be made that are strongly tied to the concept of platform capitalism. Platform companies tend to produce a massive economisation of infrastructures and a progressive intensification of existing inequalities.[18] This can often be seen in the appropriation of use of already existing space, whereas the effects often go beyond this. Platform companies not only appropriate space, but create new spaces that were 'made for them'. Some of the satellite images attached in *Discoveries* show fallow open spaces or buildings under construction because these warehouses have only been built in the last few years by companies such as Amazon.

"Platforms are simultaneously dependent on space, and to some extent, independent of space"[19] because platforms have the ability to transgress temporal and spatial gaps, thus are able to become independent of space. This leads to a contradiction because at the same time, platforms require the data they can harvest from space (e.g. in terms of location points) in order to satisfy their desire for further optimisation. This in turn causes an interaction between the "space as the site of execution and space as the resource that feeds the mechanisms and advances of this technology"[20] Sandro Mezzadra contributes to these observations, that platforms do not only produce space but also create abstract matrices of power. Of great interest is that Mezzadra creates a link between the space-creating qualities of platforms and those of logistics. He gives both the same quality to produce space and argues that the "space of logistics is closer to the space of platforms than to the traditional geopolitical space."[21]

[18] Moritz Altenried, Stefania Animento and Manuela Bojadžijev, "Plattform-Urbanismus: Arbeit, Migration und die Transformation des urbanen Raums," in sub\urban. Zeitschrift für Kritische Stadtforschung 9, no. 1/2 (2021), 88.

[19] Helge Mooshammer, Peter Mörtenböck, Sandro Mezzadra, "In Conversation With Sandro Mezzadra," in Platform Urbanism and Its Discontents, edited by Helge Mooshammer and Peter Mörtenböck (Rotterdam: nai010 publishers, 2021), 42.

[20] Ibid. 44.

[21] Ibid. 47.

The spatial conditions and effects in the case of the Amazon returns consist of an interplay between those of a logistical nature and those based on the classic effects of platform companies. However, the access to labour can be identified as the decisive factor that determines these spaces, both their locality and their design. It is an interplay of labour that shapes the space, and the space that, through its constitution, shapes the labour and its corresponding working conditions.

figure 07: insight into the warehouse Amazon BTS2, in the foreground conveyor belts in the background workplaces with workers.

figure 08: space in Amazon BTS2 after the opening, decorated with balloons and the slogan: work hard. have fun. make history.

The Workers

Despite Amazon's highly technological infrastructure, the returns process relies on human labour in many places. The trackers spend a large part of their time in trucks that are driven by human workers. In the warehouses, it is also likely that the returns are handled by humans. Above all, checking the condition of returned goods is difficult to classify and therefore exceedingly intricate to be technically automated. This may be the reason why this work is carried out in Eastern Europe, in countries with low wages. However, the flow and handling of goods are also highly supported and influenced by technology. It is mostly algorithms that specify the exact processes and control their timing; the human worker only becomes the executing subject of clearly defined tasks. Algorithms play a vital role in shaping the material properties and organisational capacities of an infrastructure, also in the observed processes of Amazon returns. It is the algorithm that "registers a form of infrastructural power"[22].

From a research report by Miriam Posner, who booked a course for *SAP SCM 7*, the most widespread software in use for supply chain management, emerges that usually, there is not one person or supervisor who has a full overview of the entire supply chain. The interface is able to display a company's supply chain and its properties on different levels of the process. The 'Supply Chain Cockpit'[23] is the highest-level view and "depicts distribution centres, shipping routes and manufacturing locations all arrayed on a map, as though they can be monitored from above"[24]. Apart from the very general view of the entire process, the individual actions are divided into separate data packages, so that each user only has access to a certain part whereas the rest is performed by the programme. "Data dictates a set of conditions which must be met, but there is no explanation of how that data was derived; meanwhile, the software takes an active role, tweaking the plan to meet the conditions as efficiently as possible."[25] A huge problem with those methods for the assessment of productivity and efficiency is that they measure performance as an abstract numerical value, making them unable to accommodate more affective factors regarding the worker as a human being.

There is no question that the software used in the global logistics industry establishes protocols and standards that shape economic and social interactions and thus create effects beyond the logistics industry itself. Technologies manage "the passage and pace of workers through the workplace with the aim of maximising efficiencies"[26]. In the warehouses and on the way there, the technologies on use fulfil the goal to control and coordinate the movement of objects and also the workers' bodies. The technologies are an example of the media that enables automated coordination and control of workers, with data collected and analysed to increase productivity. The practical research into Amazon returns shows that the packages move

[22] Ned Rossiter, "Software, Infrastructure, Labor: a Media Theory of Logistical Nightmares" (New York: Routledge Taylor & Francis Group, 2016), Preface xv.

[23] see figure 10.

[24] Miriam Posner, "Breakpoints and Black Boxes: Information in Global Supply Chains." (UCLA, 2021), 8.

[25] Miriam Posner, "The Software That Shapes Workers' Lives." (The New Yorker, 12 March, 2019), https://www.newyorker.com/science/elements/the-software-that-shapes-workers-lives.

[26] Anja Kanngieser, 601.

towards the east of Europe, for one reason: labour exploitation. "The flexibility of global supply chains and just-in-time modes of production shape who gets employed, where they work, and what sort of work they do."[27]

Breaking it down to its essence: It is capital that makes European based logistical platform companies move labour-intensive processes to Eastern European countries. Here, the labour costs are so low that despite the long transportation routes, a surplus of capital value can be achieved. According to reports, the observations can be classified as part of a phenomenon that has become a standard in the logistics sector. Due to the high prices of land in Central Europe to build storage space on, companies have started to move goods around in rolling warehouses, i.e. in trucks. Up to a certain filling level of the trucks, the price per square metre for storing goods in the moving trucks is cheaper than buying new storage space.[28] Due to this structure of effects, it is worthwhile for Amazon to drive the returned goods through the region, despite such long distances, until they finally arrive at a cost-effective location. Remarkable is that Amazon does not build those warehouses and fulfilment centres in Eastern Europe for an Eastern European market but to obtain particularly cheap conditions for labour-intensive tasks that require human resources in order to serve the Western European market in countries like Germany. What makes Eastern European countries so interesting for logistical platform companies like Amazon are not only the significantly lower labour costs, but tax advantages, favourable land and capital-friendly labour laws compared to Western Europe.[29] At this point it becomes evident that work cannot be thought of without the mobility that constitutes it, and what has also been theorised many times is that platform work is predominantly migrant work.[30] What is particularly interesting about the example of *Return* is that a big part of the migrant labour involved in the process is not undertaken by migrant workers on the home territory of the service users. Instead, it is done in a foreign labour market which, due to its precariousness, offers ideal circumstances for exploitation. In the logic of exploitation in platform capitalism, paying migrant workers living in Germany is no longer cheap enough, so that foreign labour abroad opens up the possibility to continue generating a surplus of capital, despite the enormously long delivery distances.

When researching Amazon's infrastructures on *Google Maps* a billboard in front of a new Amazon warehouse in Poland, put up by Amazon in 2019, can be found. It is advertising work in the warehouse and promises the workers an hourly wage of 17.50 Złoty, which is the equivalent of about €3.55 – one third of the minimum hourly wage in Germany. The warehouse *Amazon SZZ1* in question is located behind the German-Polish border, less than a two-hour drive from Berlin. It rapidly becomes clear how lucrative the outsourcing of platform work to Eastern Europe is for Amazon. In the statistics on European minimum

[27] Ned Rossiter, 6.

[28] Felix von Leitner, "Wed Sep 22 2021" (Fefes Blog, 22 September, 2021), https://blog.fefe.de/?ts=9fb5b288.

[29] Amazon Workers and Supporters, "'Stop Treating Us Like Dogs!': Workers Organizing Resistance at Amazon in Poland," in Choke Points: Logistics Workers Disrupting the Global Supply Chain, edited by Jake Alimahomed-Wilson and Immanuel Ness (London: Pluto Press, 2018), 97.

[30] Moritz Altenried, Stefania Animento and Manuela Bojadžijev, 83.

wages, Poland, the Czech Republic and Slovakia are in 14th, 15th and 16th place with a wage equivalent to €3.70 - €3.80 as of February 2022.[31]

This capitalist attitude and way of action spans our entire logistical economy, massively shaping how the spaces it comes into contact with are designed and how the work that is done there is constituted. *Return* reveals these often hidden effects. The products we order and then subsequently decide to return, cause a framework of impact that creates concrete physical spaces in Eastern European suburbs, which are based on the exploitation of precarious labour.

[31] WSI (Mindestlohndatenbank), "Gesetzliche Mindestlöhne pro Stunde in Ländern der Europäischen Union," (Statista, 18 February 2022) https://de.statista.com/statistik/daten/studie/37401/umfrage/gesetzliche-mindestloehne-in-der-eu/.

figure 09: bus stop – autobusová zastávka at Amazon BTS2.

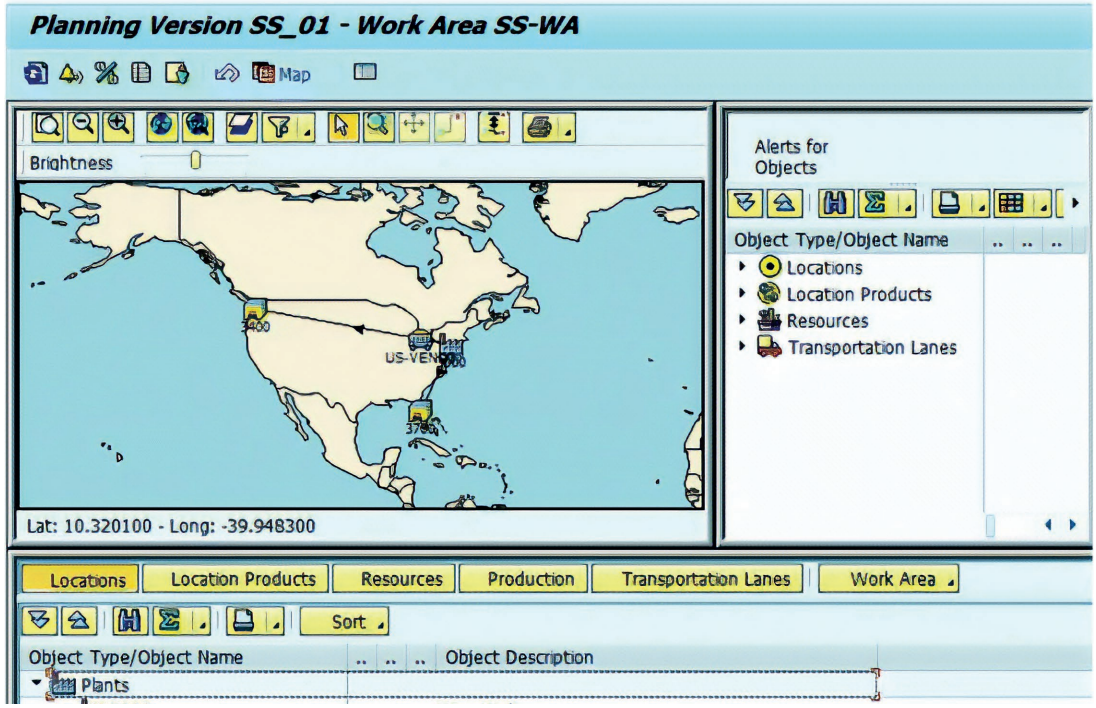


figure 10: supply chain management software SAP SCM

figure 11: advertisement in front of an Amazon warehouse in Poland.

Observations

Return Live

Return Live is a real time mixed media installation which links the global planetary scale with the concrete physical localities and bodies in the logistical infrastructure of Amazon returns. The automatically traced lines on the website, which are still perceived globally as long movements on a map, get linked to specific places that often follow the view of the working person. The global context gets localised and is thus filled with meaning. The work is a spatial installation that works with different media and implements artefacts found in the research process as part of the exhibition.

The installation works with the live location data from a returned GPS tracker and interactively adapts to the data received from the tracker. The tracker is sent back from the exhibition site immediately before the exhibition commences. The duration of the exhibition is flexible and depends on the time span of the return time up to the moment when the battery dies. This timeframe is approximately 40-60 days.

The circular satellite map on the ground shows a bird's eye view of the tracker's current position. Here, geographical features can be identified and categorised by the viewer. A large percentage of the time, moving images of motorways or relatively static images of warehouses will be visible at this location. The images can be categorised into their surroundings by the recording perspective of a global satellite orbiting the earth. It opens the viewer the opportunity to discover and understand the types of spaces described in *The Local*. The map is calibrated and marked to the geographical north in the physical space. Upon closer and lengthier observation, the before described journey towards the east can be observed.

The installation is supplemented by a first person shot, which, if available, shows the closest *Google StreetView* image of the current location. In many cases, this perspective shows the actual view of a logistical worker. The materiality – a projection on a transparent truck windshield – emphasises the workers view through a windshield of a logistical vehicle. Sometimes the *StreetView* shots provide rare glimpses into the hidden world of warehouses' interiors, made possible by panoramic shots uploaded by workers via Google. In other cases, it shows large warehouses including docking points for the trucks from the outside. The graphical representations are supplemented by metadata which provide information about the current location. The GPS coordinates locate the tracker's position in a globally fixed system of latitude and longitude. This unique information is converted into humanly legible address information, using a 'reverse-geocoding' algorithm. Outputs are: category of the current location, street and house number, postal code and city, as well as the country in which the tracker is located at the current time.

Implemented in the room setup is an 'observation station' which shows the current website. At this instance, the user can track and trace the routes recorded so far and the locations

discovered by all trackers sent up to that point and investigate them. The exhibition is complemented by an artefact, a pallet filled with Amazon cartons wrapped in stretch film. Pallets of this kind could be found repeatedly in the research on photos from the corresponding warehouses. The wall behind the pallet is decorated with the writing 'work hard. have fun. make history.' A slogan that also adorns the walls of the central warehouse *Amazon BTS2* and, in the context of the documented political dimension, it intends to open up a discussion through this seemingly ironic narrative.

The installation connects the human consumers with the exact locations of their returned items. Embarking on a journey with the trackers allows for a direct connection of the viewer and the geographic movements made by the tracker as well as the discovered localities. Viewing concrete physical places from the two perspectives raises questions about the places: Where they are? What are they? What bodies are they occupied by? And also: What will be the next move? *Return Live*, exposes Amazon's logistical infrastructure in real time and makes it accessible to the viewer. The work is a systematic critique of the capitalist system and the conditions it creates. It embodies the actions of multinational corporations that are enabled by the usage of technology and which, driven by profits, extract surplus value from precarious, sometimes hidden, labour. In times of increasingly complex logistical processes, the access to tangible physical places creates a practical understanding of a system that is controlled and understood in its entirety only by machines.

The work has already been exhibited at AMRO22[32], a festival dedicated to art, hacktivism and open culture from 15th to 17th June 2022 in Linz. In this context, an exchange with other artists and designers working on similar topics was possible and stimulated further discussions on the topic. This exhibition was accompanied by a talk held together with Conrad Weise, that explained the idea behind the project and that described the findings and their implications. The project was thus presented to an interested international community and the first gates for a further expansion of the project were opened.

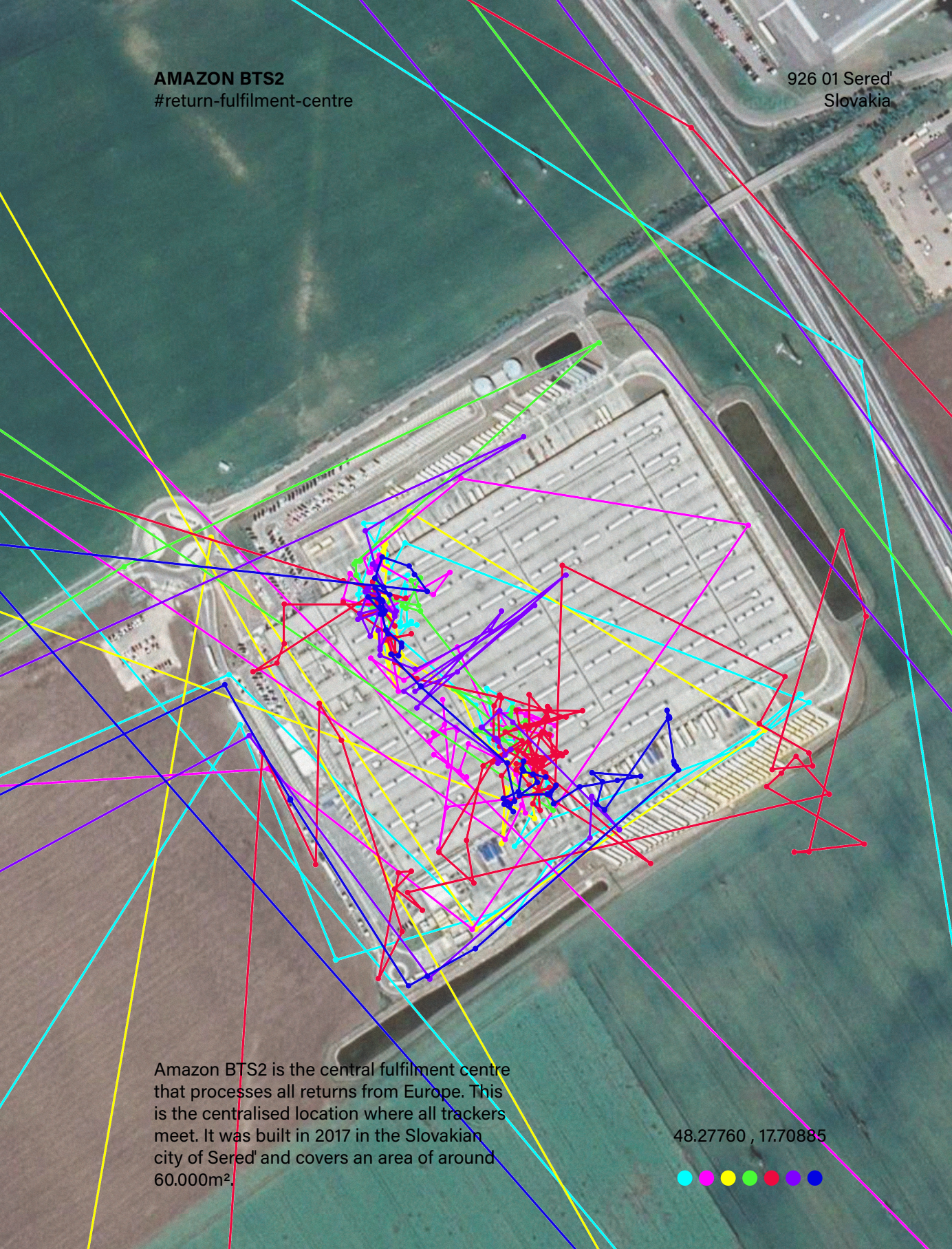
[32] AMRO22 – Art meets radical openness. https://art-meets.radical-openness.org/.

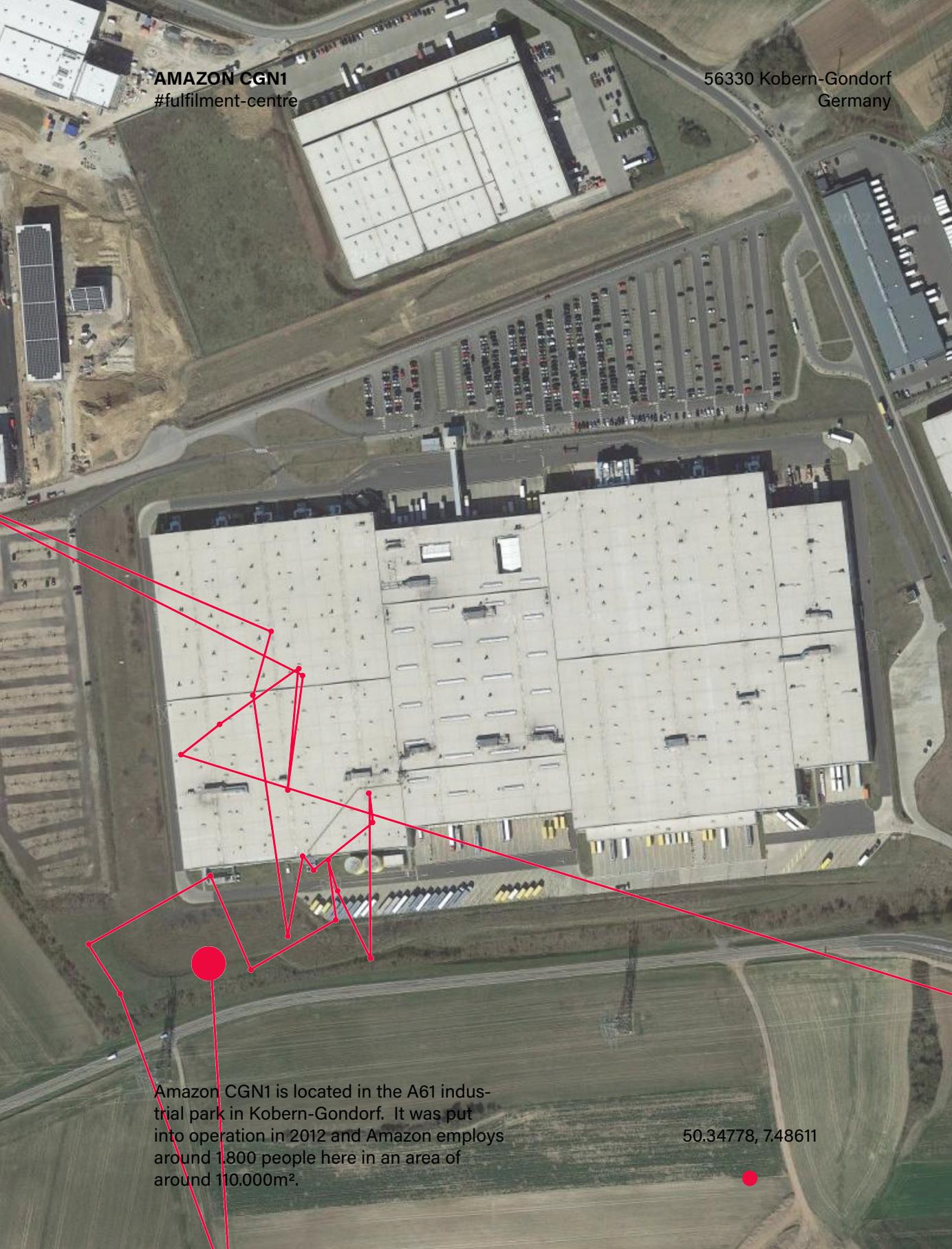
figure 12: pallet filled with Amazon boxes.

figure 13: rendering of the *Return Live* exhibition.

Discoveries

The following pages represent an encyclopaedia of logistical locations that have been identified in the Amazon return process to date. This chapter is intended to document the discoveries made so far and opens up the possibility to place them in the context of the theoretical discussion described earlier. The focus here is on the spaces of reallocation, i.e. warehouses and fulfilment centres of Amazon and its subcontractors.


AMAZON BTS2
#return-fulfilment-centre
926 01 Sered'
Slovakia
Amazon BTS2 is the central fulfilment centre that processes all returns from Europe. This is the centralised location where all trackers meet. It was built in 2017 in the Slovakian city of Sered' and covers an area of around 60.000m².
48.27760 , 17.70885

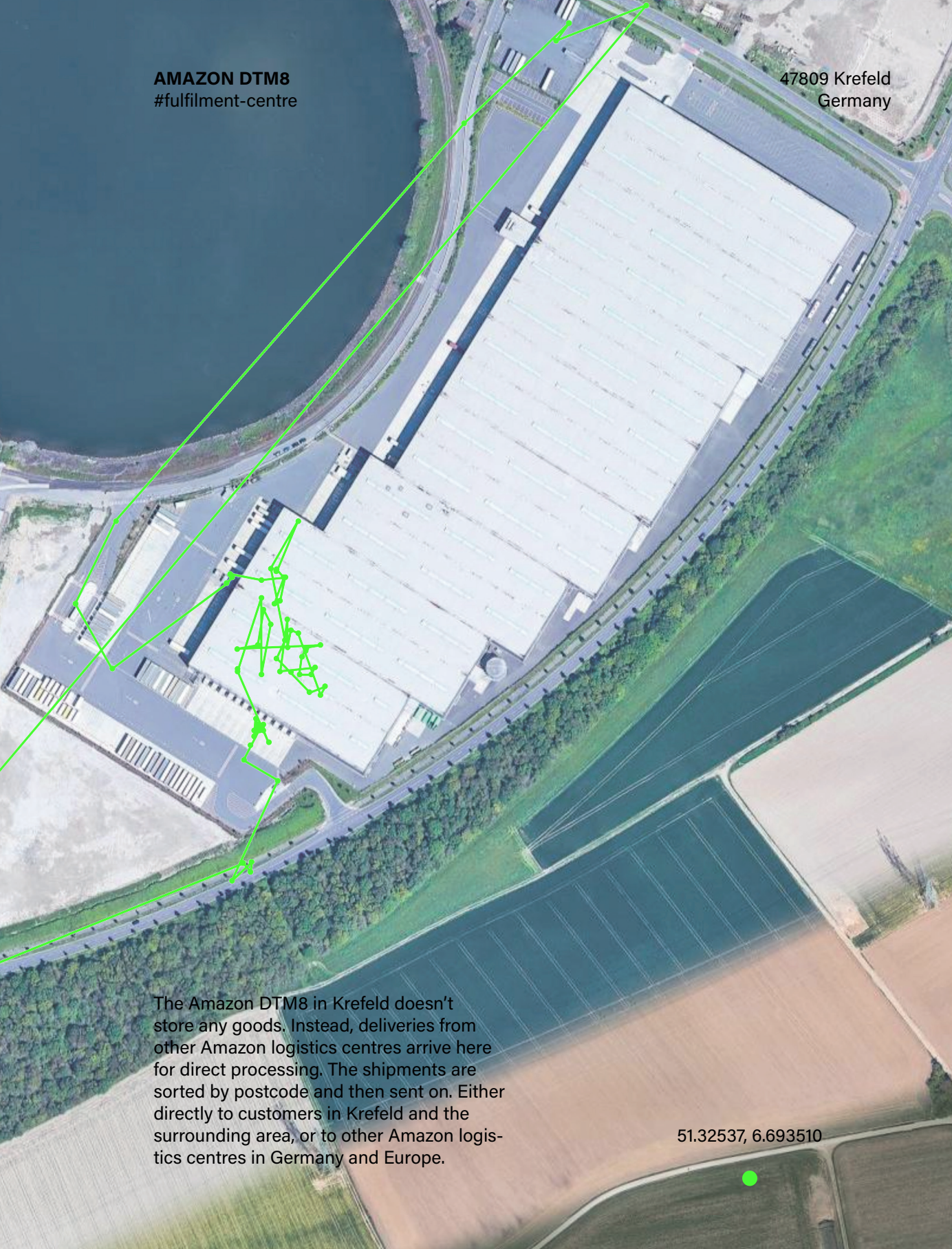


AMAZON CGN1
#fulfilment-centre

56330 Kobern-Gondorf
Germany

Amazon CGN1 is located in the A61 industrial park in Kobern-Gondorf. It was put into operation in 2012 and Amazon employs around 1.800 people here in an area of around 110.000m².

50.34778, 7.48611

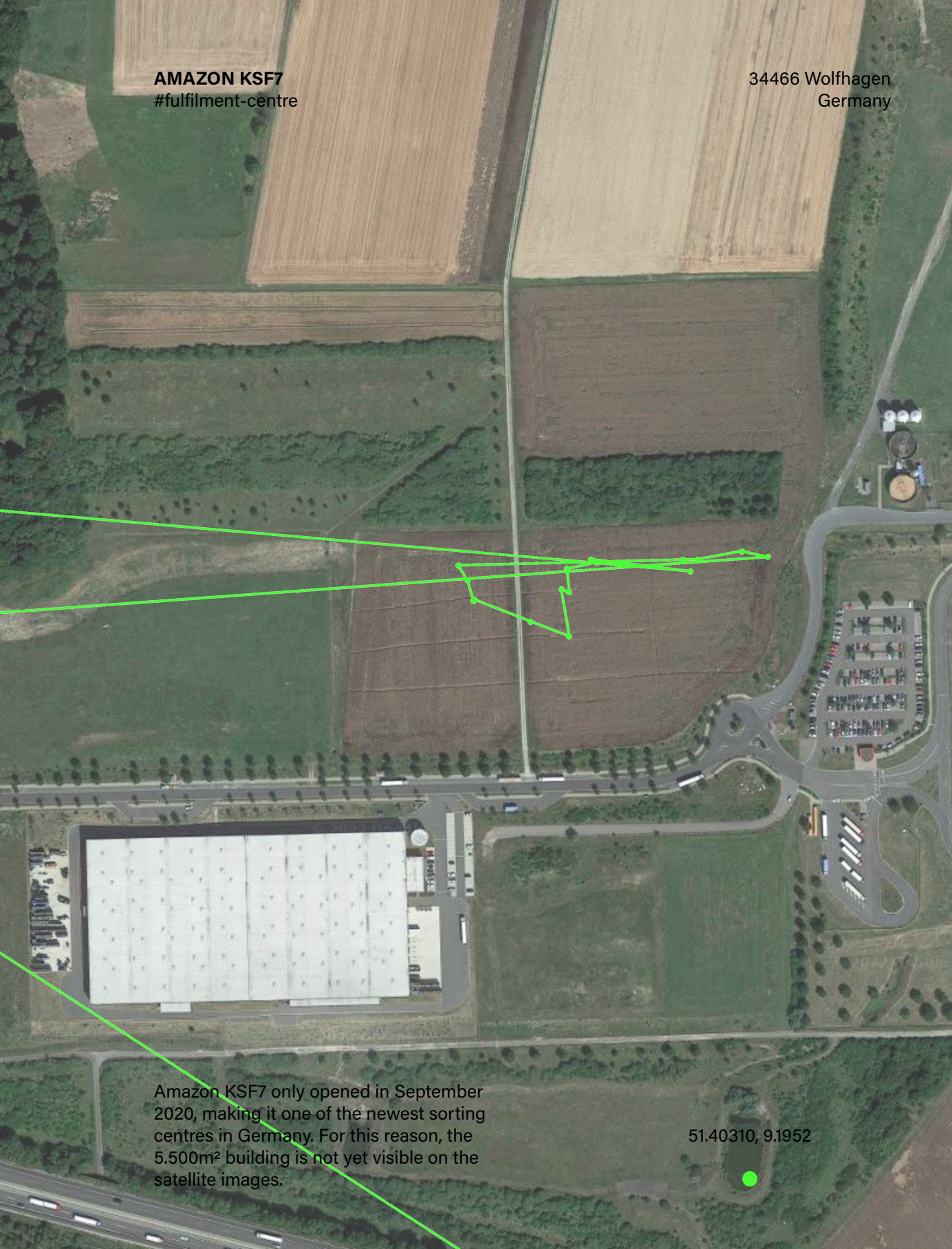


AMAZON DTM8
#fulfilment-centre

47809 Krefeld
Germany

The Amazon DTM8 in Krefeld doesn't store any goods. Instead, deliveries from other Amazon logistics centres arrive here for direct processing. The shipments are sorted by postcode and then sent on. Either directly to customers in Krefeld and the surrounding area, or to other Amazon logistics centres in Germany and Europe.

51.32537, 6.693510


AMAZON KSF7
#fulfilment-centre
34466 Wolfhagen
Germany
Amazon KSF7 only opened in September 2020, making it one of the newest sorting centres in Germany. For this reason, the 5.500m² building is not yet visible on the satellite images.
51.40310, 9.1952

AMAZON KTW1
#fulfilment-centre

41-208 Sosnowiec
Poland

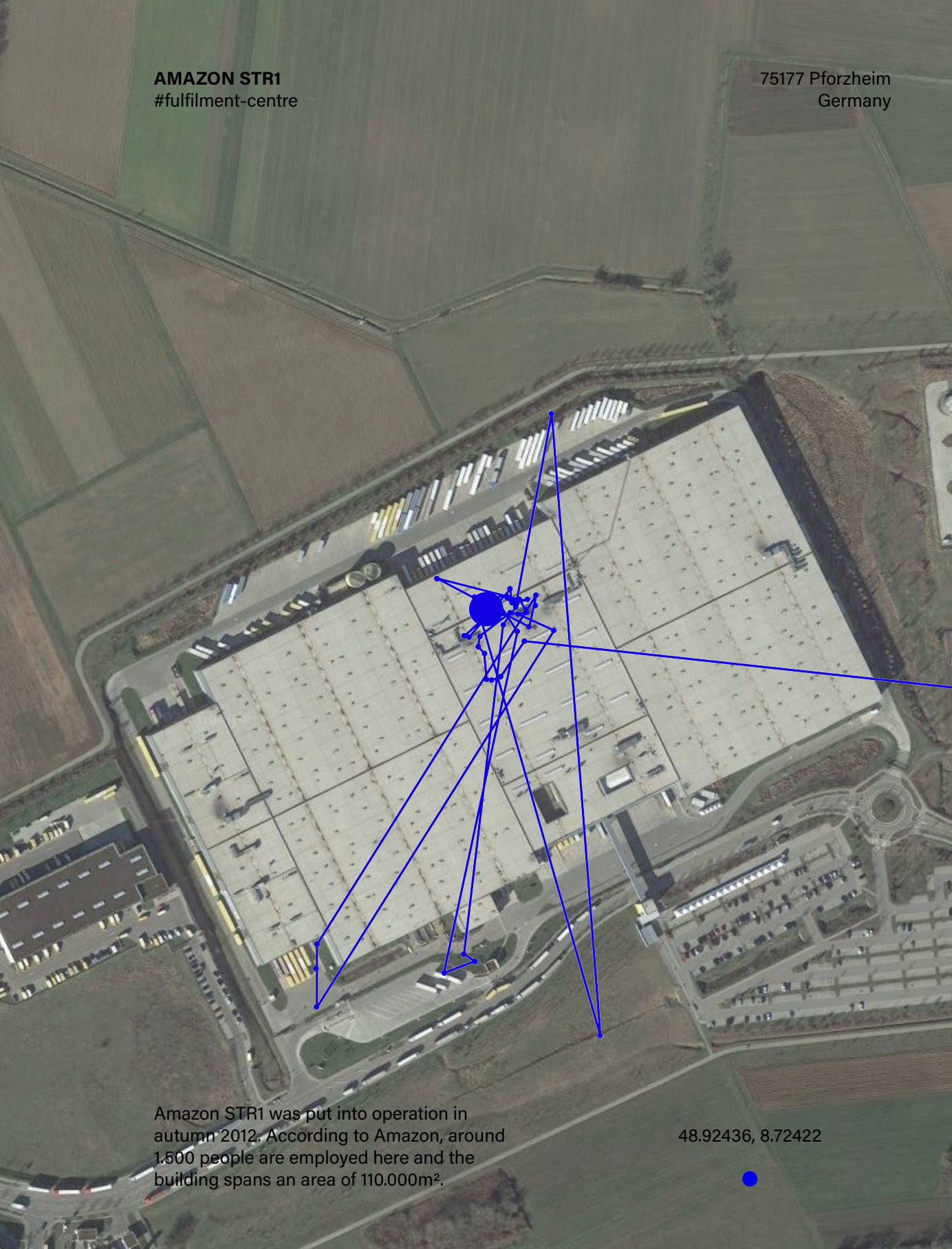
Amazon KTW1 opened in 2017 and is one of the centres marking Amazon's expansion into Eastern European countries.

48.27760 , 17.70885


AMAZON LYS8
#fulfilment-centre
38290 Satolas-et-Bonce
France
Amazon LYS8 is a warehouse of the French domain of Amazon. No further information can be found about this location.
45.67517, 5.10323

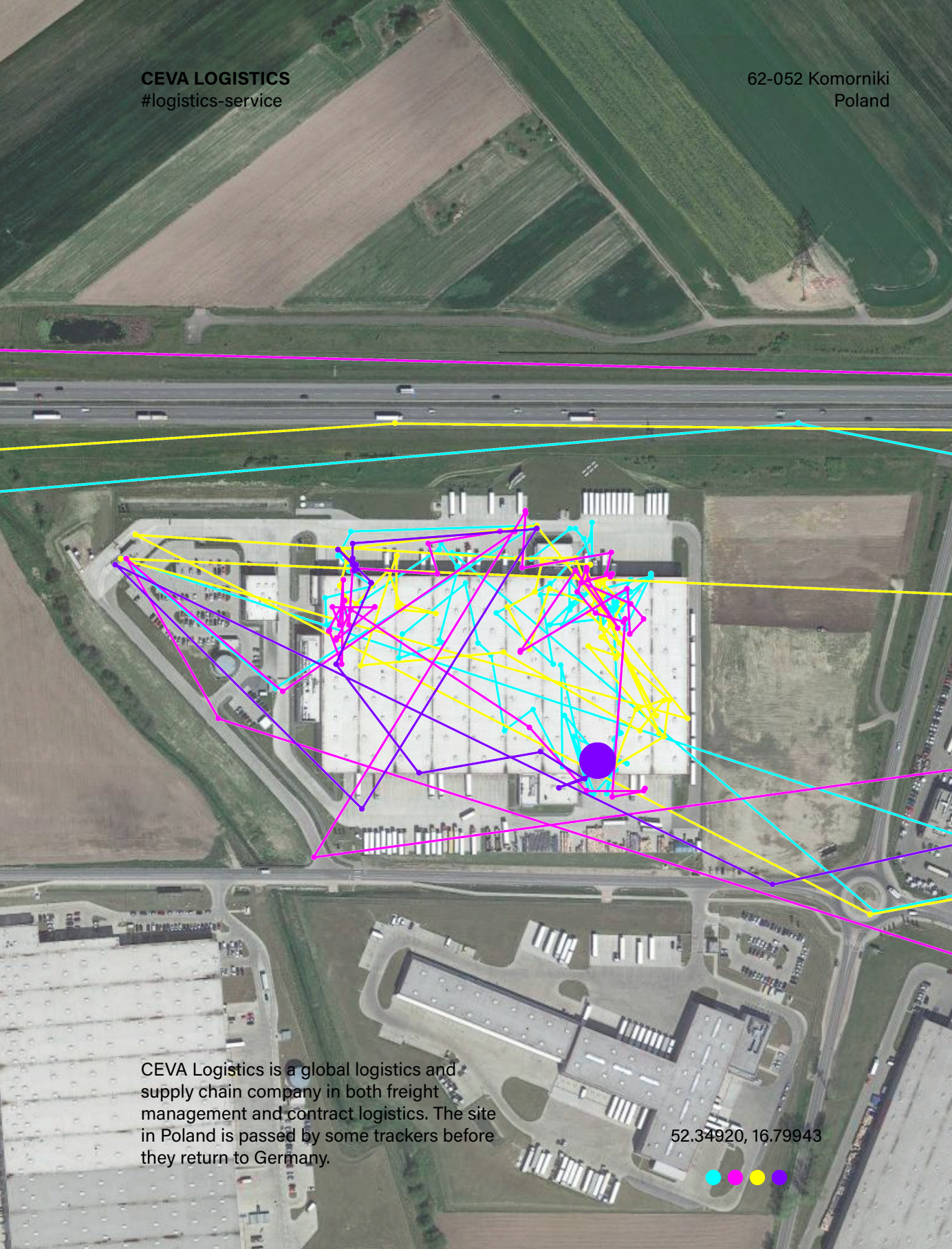
AMAZON STR1
#fulfilment-centre

75177 Pforzheim
Germany



Amazon STR1 was put into operation in autumn 2012. According to Amazon, around 1.500 people are employed here and the building spans an area of 110.000m².

48.92436, 8.72422

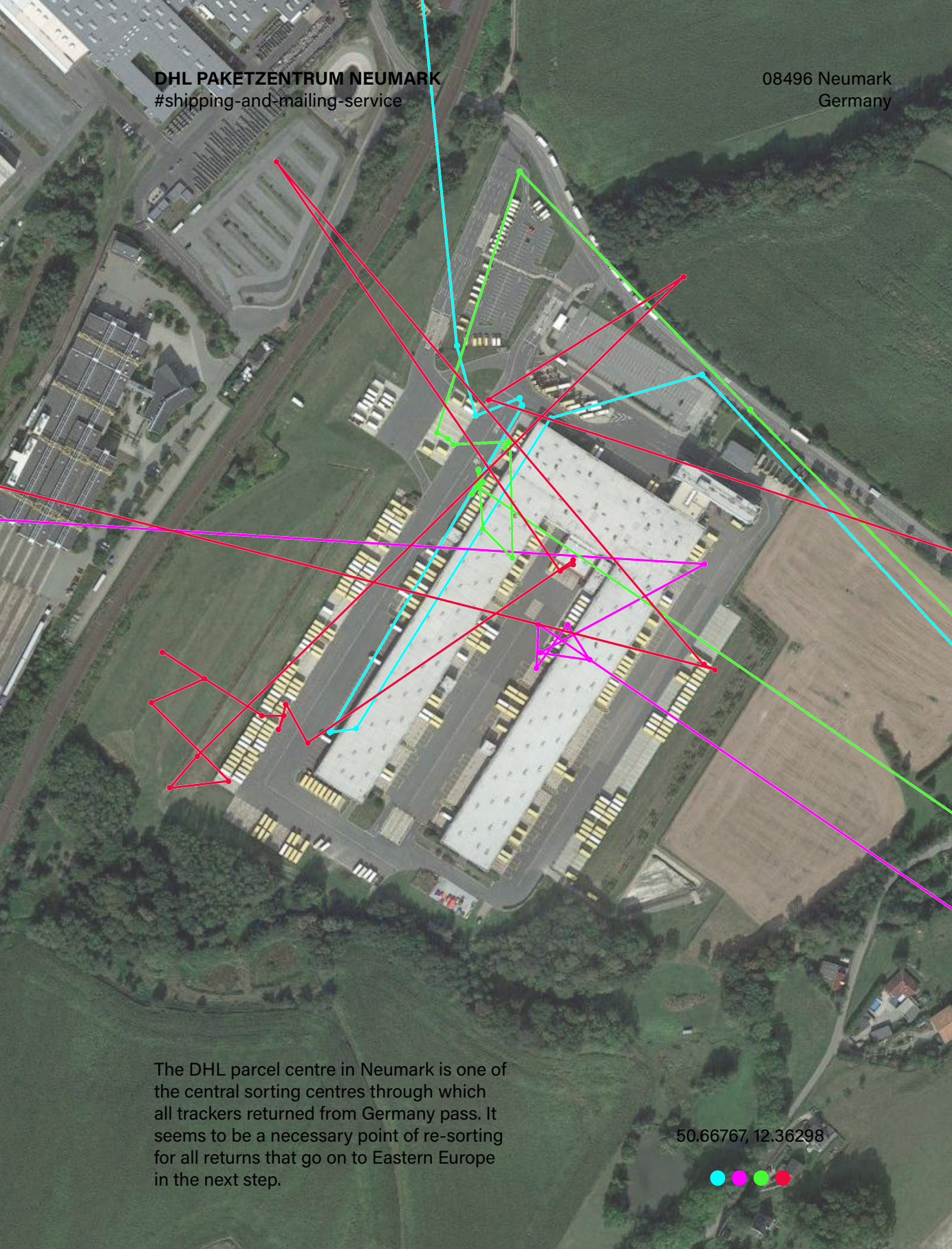


CEVA LOGISTICS
#logistics-service

62-052 Komorniki
Poland

CEVA Logistics is a global logistics and supply chain company in both freight management and contract logistics. The site in Poland is passed by some trackers before they return to Germany.

52.34920, 16.79943


DHL PAKETZENTRUM NEUMARK
#shipping-and-mailing-service
08496 Neumark
Germany
The DHL parcel centre in Neumark is one of the central sorting centres through which all trackers returned from Germany pass. It seems to be a necessary point of re-sorting for all returns that go on to Eastern Europe in the next step.
50.66767, 12.36298


RELAYS COLIS
#logistics-service
77380 Combs-la-Ville
France
Relais Colis is a French shipping company whose location in Combs-la-Ville is passed by the tracker sent back from France before it enters the actual Amazon infrastructure.
48.64817, 2.55767

Appendix

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