

# Logistics robots – What's possible and how to do it in practice in Helsinki?

Are you developing a fancy new autonomous logistics or delivery robot and looking for a real-world place to test it in? Here's an overview about the general process of what to do to get a pilot going with autonomous things in Helsinki: How to find help, what permits are needed, who to contact, etc.

## WHERE TO START: IDEA & DEFINING THE USE CASE

If you are planning on testing autonomous robots in Helsinki, the first thing you can do is contact [Mobility Lab Helsinki](#). The Mobility Lab helps companies test and develop their solutions in the real urban environment. The Mobility Lab can, for example, help you with defining the use case, finding a suitable place for testing, help you to get a grasp on the local regulation environment (including the needed permits) and guide you in getting touch with the authorities you need to be in contact with.

Before you engage in discussions with the Mobility Lab, there are few things we'd like you to prepare and think about in advance:

- A short summary of your planned use case. What's the robot for, who's the user, ..?
- Technical details of your solution/robot. Weight, power, size, ...
- Where are you planning to test your solution? Do you have a specific place in mind, ...
- What are the needs for the test location? E.g. use of roads, storage, accessibility, need for electricity or other installations, ...?
- Partners for the pilot. Are you in need of customers, partners, researchers for the pilot, ..?
- Existing/needed funding to run the pilot. Are you looking for funding, joint projects or just a place for piloting, ..?

Based on your use case and solution, the Mobility Lab can help you with finding a suitable location for testing and facilitate the discussions with the right authorities.

In practice, there are three main regulative authorities you need to be in contact with in order to receive the needed permits for testing autonomous robots in Helsinki; the Finnish Transport and Communications Agency Traficom, The City of Helsinki and the National Police Board of Finland.

## REGULATION ON AUTOMATION & PERMITS FOR PILOTING ROBOTS

In Finland, the regulation regarding piloting autonomous vehicles in real urban environment is enabling in nature. The organisation responsible for monitoring and developing regulation on autonomous vehicles in Finland is the Finnish Transport and Communications Agency Traficom.

Traficom needs to be engaged in discussions regarding the current legal requirements and required official permits and certificates for your autonomous platform when planning any autonomous vehicles related testing or piloting activities in Finland.

The needed certificates (test plates, other permits) vary depending on the technical characteristics of the robot/vehicle in question. An autonomous delivery robot can, for example, be classified as a pedestrian-assistance vehicle that can operate on pedestrian/bicycle lanes with pedestrian rules if the max speed of the robot is limited to 15 km/h and the power of the robot is max. 1 kW.



However, If the vehicle is faster or it has an engine more powerful than 1 kW, it falls under the classification of L7e. In Finland, the vehicles classified as L7e are only allowed to be operated on car lanes. According to the current regulatory framework, vehicles classified as L7e are not legally allowed to be operated on pedestrian streets nor bicycling lanes. However, a temporary permit for operating on pedestrian and bicycle lanes (even with vehicles classified as L7e) is relatively easy to receive in Finland through negotiations with the municipality and the police administration (more information in chapter 3). It should be noted that this is a rapidly developing topic and it's important to ensure what the up-to-date regulations are.

In practice, however, we encourage you to be directly in contact with Traficom early on when planning pilots. The expected processing time for submitted permits is around a month. This gives you an opportunity to explain the content and needs of your upcoming pilot, provide the technical details of your platform in advance and provides Traficom the context of your operations, thus ensuring the speedy processing of your official certificate application.

They will want to understand things such as:

- general information (e.g. what, where, when, how many vehicles, what time period and times of day, who's the operator),
- vehicle technical information (vehicle type, speed, measurements, braking system & steering, AV systems to be used, restrictions regarding ODD and other traffic, etc.),
- test area information (routes and road crossings, road types, challenging situations, infrastructure requirements),
- safety aspects (risk evaluation, how will risks be addressed and issues solved),
- research plan (purpose, research questions), and
- other information (such as data collection and training of operators/drivers).



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## PERMITS FROM THE CITY & POLICE ADMINISTRATION FOR USING PUBLIC SPACE

If your company seek to test autonomous robot in the public space in the real urban environment, you'll need a permission from the City of Helsinki to utilize public street space for piloting purposes. In addition, as the authority in charge of monitoring traffic safety in Finland, the National Police Board of Finland needs to be informed on the upcoming pilot operations.

In practice, the City grants permits for using the public space as a work area for different types of activities. If you wish to use a street or, e.g., a park as a testing area for your autonomous solution, you must submit a notification about the use of the area to the City. In addition to the notification application, the City requires a temporary traffic arrangement plan if the testing affects other street users in any way.

### A notification about work in public area (area lease)

A notification about the use of a public area (area lease) must be submitted to the City at least seven working days before the planned starting date. The notification application document consists of basic information on your company, contact information and description of the desired area your company wishes to rent for testing purposes.

In practice, however, we encourage you to be directly in contact with the City officials at least four weeks before the planned starting date. This gives you an opportunity to explain the content and the needs of your upcoming pilot and provides the City officials the context of your operations, thus ensuring the speedy processing of your area lease application. You can be in contact with the City inspectors by email ([luvat\(at\)hel.fi](mailto:luvat(at)hel.fi)).

How to apply for the area lease permit:

- Fill out the notification about work in a public area ([pdf](#)) and mark "Aluevuokraus" as the type of notification.
- Compile a temporary traffic arrangement plan as an attachment to the notification – see instructions [here](#) under "Does the work affect traffic"?
- Submit the notification and its attachment(s) and a signed letter of credentials (if needed) by e-mail ([luvat\(at\)hel.fi](mailto:luvat(at)hel.fi)) at least seven days before the planned start date.
- If you need more time or have completed the work, submit a notification using this form ([pdf](#)).

The needed information and instructions in detail (including the notification pdf) for submitting the notification about work in a public area (Figure 1) can be found here:

<https://www.hel.fi/helsinki/en/housing/plots-land-buildings/permits-for-public-areas/working-on-streets-and-in-parks/>.



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<b>Helsinki</b>		Toimita ilmoitus liitteineen sähköpostitse osoitteeseen: <a href="mailto:huvat@hel.fi">huvat@hel.fi</a>		<b>Ilmoitus yleisellä alueella suoritettavasta työstä</b>	
<input type="checkbox"/> Kaivulmoitus		<input type="checkbox"/> Aluevuokraus		<input type="checkbox"/> Tilapäiset liikennejärjestelyt	
Hakijayhtymän nimi Date of application (dd.mm.yyyy)		Johtajaseilytunnus		Sijotusluupa-/sijotusostamustunnus	
<b>Päätöksenhakija</b> (osoy, koty, yritys tai henkilö)			<b>Yhteyshenkilö</b> (päättökseen hakijan edustaja)		
Nimi Name of the company applying the permit			Nimi Name of the contact person		
Osoite Address			Sähköposti email address		
			Puhelin phone number		
<b>Rakennuttaja</b> (hankkeen pääurakoitsija)			<b>Yhteyshenkilö</b>		
Nimi			Nimi		
Osoite			Sähköposti		
			Puhelin		
<b>Työnsuorittaja</b> (kaivo-urakoitsija, nosturyhtiö tms.)			<b>Yhteyshenkilö</b>		
Nimi Name of the company carrying out the work			Nimi contact person		
Osoite Address			Sähköposti email address		
			Puhelin phone number		
			Kaivutyöstä vastaavaan henkilöön pätevyys ja pätevyiden voimassa olo <input type="checkbox"/> Tieturva 1 <input type="checkbox"/> Tieturva 2 <input type="checkbox"/> PKS katutyökunsi, voimassa		
<b>Työn yleisetiedot</b>		<b>Laskutustiedot</b>			
Työn alku- ja päättymispäivä dd.mm.yyyy - dd.mm.yyyy		Nimi, osoite ja v-tunnus/tilinumero Invoicing info and business ID		Työnumero tai laskuville	
Työn laajuus (m <sup>2</sup> )		ID			
<b>Työkohteen sijainti</b> (osoite, tarvittaessa kortti, tontti tai muu tarkennus)					
Location of the site					
<b>Lisätiedot</b>					
Additional info					
<b>Työn tarkoitus</b>					
<input type="checkbox"/> Vesi	<input type="checkbox"/> Ulkovaistaus	<input type="checkbox"/> Kadunrakennus	<input type="checkbox"/> Äkillinen vikakorjaus	<input type="checkbox"/> Kiinteistöremontti	
<input type="checkbox"/> Viemäri	<input type="checkbox"/> Kaappityö	<input type="checkbox"/> Kadun kunnossapito	<input type="checkbox"/> Vihertyöt	<input type="checkbox"/> Ulkomainos	
<input type="checkbox"/> Sadevesi	<input type="checkbox"/> Kaukolämpö	<input type="checkbox"/> Kiinteistöiltilmä	<input type="checkbox"/> Runkolinjat	<input type="checkbox"/> Kuvaukset	
<input type="checkbox"/> Sähkö	<input type="checkbox"/> Kaukokuilma	<input type="checkbox"/> Sulku tai kaivo	<input type="checkbox"/> Nostotyö	<input type="checkbox"/> Lumenpuodotus	
<input type="checkbox"/> Tietoliikenne	<input type="checkbox"/> Kaasujohdot	<input type="checkbox"/> Uudisrakennus	<input type="checkbox"/> Muutto	<input type="checkbox"/> Yleisötllisuus	
<input type="checkbox"/> Liikennevalo	<input type="checkbox"/> Kiskotyö	<input type="checkbox"/> Saneeraus	<input type="checkbox"/> Pysäkkityö	<input type="checkbox"/> Vaihtolava	
<input type="checkbox"/> YKT	<input type="checkbox"/> Muu, mikä				
Täsmennys The purpose of the application					
<b>Liikennejärjestelysuunnitelma ja liitteet</b>					
Traffic arrangement plan					
Liitteet <input checked="" type="checkbox"/> Liikennejärjestelysuunnitelma <input type="checkbox"/> Haittojen hallintasuunnitelma <input type="checkbox"/> Valtakirja <input type="checkbox"/> Työsuunnitelma					
Vakuutan antamani tiedot oikeiksi, ilmoitan tutustuneeni Helsingin kaupungin nettisivuilla asiaa koskevaan ohjeistukseen ja ehtoihin ( <a href="https://www.hel.fi/helsinki/en/suminen-ja-ymmaristo/hontti/huvat/kaduilla-ja-puistoissa-tehtavat-tyot/">https://www.hel.fi/helsinki/en/suminen-ja-ymmaristo/hontti/huvat/kaduilla-ja-puistoissa-tehtavat-tyot/</a> ) sekä sitoudun noudattamaan niitä. Lisäksi vakuutan, että työmaalla oleskellessa tai työskennellessä on paikalla aina ainakin yksi henkilö jolla on voimassa Pääkaupunkiseudun katutyö- /koulutuskesä saatu pätevyys (PKS-katutyökortti). Mikäli kyseessä on kaivutyö vastaan myös siitä, että kaivutyöstä vastaavalla on voimassa oleva Tieturva 1, Tieturva 2 tai PKS-katutyökortti.					
<b>Allkirjoitus</b>					
Päivämäärä date of signature (dd.mm.yyyy)		Päättökseenhakijan tai esimiehen allekirjoitus ja nimenselvennys Signature & print name			

Figure 1. Example of notification about work in public area (pdf)

## What does it cost?

The cost of renting a work area for your piloting purposes varies depending on the size of the area rented, for how long the area will be rented and if there is a need for additional infrastructure such as containers or other facilities. Usually the cost for renting an area for piloting purposes settles between 70-250€.

## Temporary traffic arrangement plan

If your company wishes to operate the autonomous robot in public street space, a temporary traffic arrangement plan is needed. The temporary arrangement plan is needed if your operations are taking place on a street or in a park that affects pedestrian, cycling or other vehicle traffic. A plan is also required when parking spaces are reserved for other use using signs requesting people to move their parked cars.

More information and detailed instructions for completing the temporary traffic arrangement plan see (under the caption *Does the work affect traffic?*): <https://www.hel.fi/helsinki/en/housing/plots-land-buildings/permits-for-public-areas/working-on-streets-and-in-parks/>



## Informing police administration

In Finland, the police is responsible for monitoring traffic safety. When planning piloting autonomous vehicles in real urban environment, the police administration (National Police Board of Finland) needs to be informed on the planned pilot activities beforehand.

Informing the police administration happens by sending a detailed information of the pilot by email to the police administration (kirjaamo.poliisihallitus(at)poliisi.fi.)

The information needed by the police administration:

- Background of the pilot, short summary of the operations and goals of the pilot
- Location (where does the pilot take place, what public spaces will be utilized)
- Schedule of the pilot (when does the operation take place, when will it end)
- Information on the used equipment (technical details of the robot)
- Confirmations from of the permits received from Traficom and the City of Helsinki

The police administration will handle the notification usually within a couple of weeks. However, we encourage companies to be in contact with the police as early as possible.



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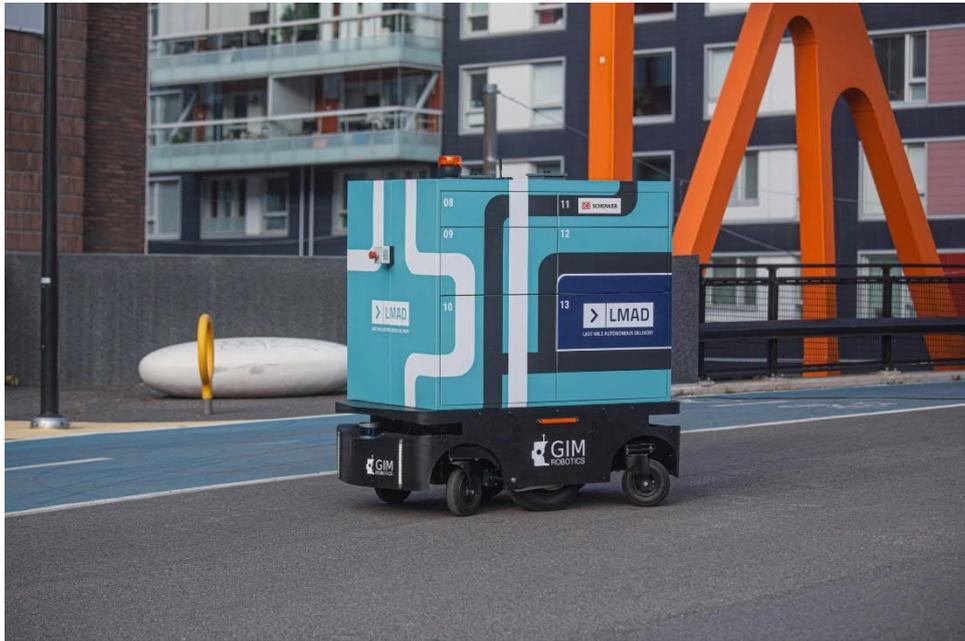
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## CASE EXAMPLE: LMAD – LAST MILE AUTONOMOUS DELIVERY

In 2021, LMAD-startup (Last Mile Autonomous Delivery) wanted to pilot their autonomous delivery platform in Jätkäsaari district, Helsinki (Figure 2). The Mobility Lab Helsinki helped LMAD to find the right contacts and a suitable pilot location from Jätkäsaari.

Here is a short summary of the process which enabled LMAD to pilot their robot in real urban environment.



*Figure 2. LMAD's autonomous delivery platform in Jätkäsaari, Helsinki.*

### Process with Traficom

LMAD began discussions with Traficom regarding the classification of their autonomous platform by explaining their plans for operating the platform in public streets in Jätkäsaari and by providing the technical details of their autonomous platform to Traficom. Traficom then addressed the case internally and provided their notion on the classification under which LMAD's autonomous platform settled.

After the discussions with Traficom, LMAD formulated an official application for a test license plate, which allowed LMAD to operate the autonomous platform in real urban environment in Finland. The process of applying the test plate took a couple weeks.

### Discussions with the City of Helsinki

After receiving the test plate from Traficom, LMAD started discussions with the Urban Environment Division of the City of Helsinki. LMAD provided a summary of their pilot to the city including a summary of their operations plan together with the technical details of the robot and the certificate they received from Traficom. After the discussions with the city's street inspectors (Urban Environment Division), the city confirmed LMAD could operate their autonomous platform in the pedestrian lanes in Jätkäsaari.



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After the unofficial confirmation from the city, LMAD applied for an official permit from the city to utilize a pre-defined area for the piloting purposes of the robot. They also applied for a separate permit (same process) for a storage container to be installed near the pilot area (Figure 3). The official permit applications were handled within a week.



*Figure 3. Storage container for the robot.*

Together with the permit applications, LMAD provided the city a temporary traffic management plan which included safety measures taken into account when operating the robot on public streets.

The Mobility Lab facilitated the discussions with the city by providing the right contacts and by helping LMAD to define suitable locations for both operating the robot and the storage container. Mobility Lab also facilitated the electricity installations, which enabled the charging of the robot in the on-site container.

#### Contacting the National Police Board of Finland

Mobility Lab facilitated the discussions between the National Police Board of Finland and LMAD. Same information that was provided to the City when applying the permits was also provided to the police administration.

There's no official template to be filled when informing the police administration, but an email explaining the background and technical details of the pilot together with the received permits from both Traficom and the City. In the case example, a green light for the pilot was received from the police administration within a week.



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## WHO TO CONTACT

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