

Customer-centrered Device Procedures Report



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April 2020

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1 Introduction

Glan Net is a smart device which tackles water pollution from one of its major source: Storm Pipes in urban areas. A Research study lead by Armitage and al. shows that more than 26% of litter entering drainage systems and pipes reach the sea. Another evidence of the main contribution of rivers in ocean pollution is a study by Schmidt and al. which states that between 88% and 94% of plastic litter in the oceans come from rivers - representing almost the entirety of it.[1] These evidences clearly define where the major efforts need to focus on: Storm Pipes.

Glan Net provides you with a solution to efficiently target this pollution. We have designed a smart rigid net device which combines a great durability, a low cost of purchase and maintenance, an excellent ease of use and more importantly up to 90% of litter filtered and collected.

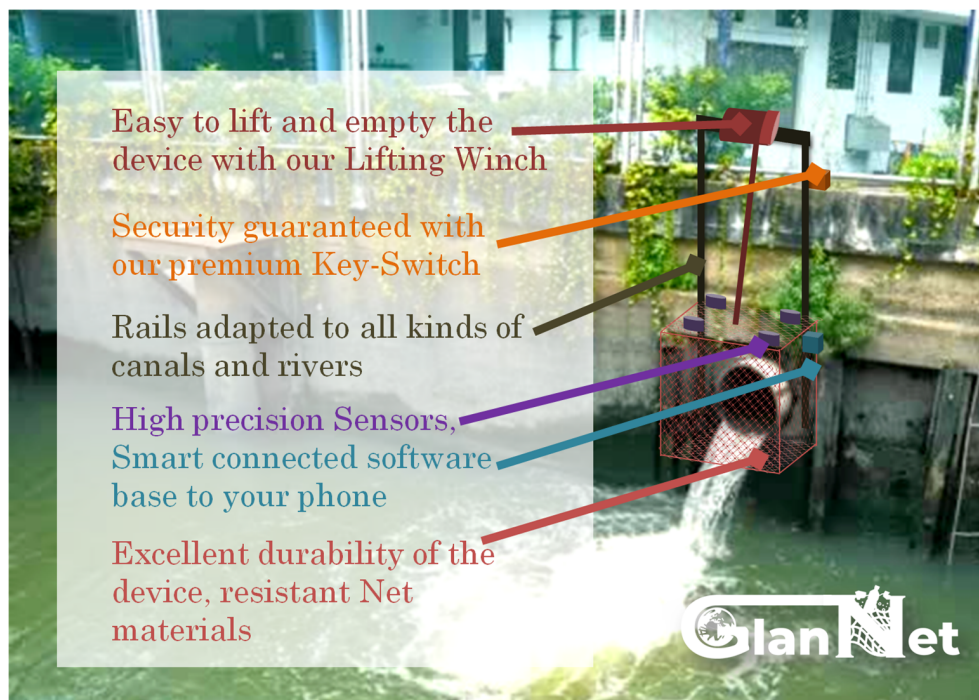


Figure 1: Details of the user-friendly functions of the smart device.

2 Target customers

The targeted environment are waterways where the storm pipes are located, mostly in urban areas. Waterways refer to any channel made of water such as rivers and canals. This can be extended to waterbodies (excluding ocean and sea) which refers to any geographical feature containing water including canals, lakes, marinas, harbours, rivers and streams. The target customers are therefore the **authorities** in charge of these waterways which can be **public** (state or regional administration) or **private** (managing companies).

In the case of the area of Dublin, the responsibility of the cleanliness of the canals, the docks and the rivers and their surroundings may be either, **Dublin City Council**: the Waste Management Services or the Water Pollution Section of their Drainage Department ; or **Waterways Ireland** in charge of the management, maintenance, development and restoration of inland navigable waterways, jointly managed by Northern Ireland and the Republic of Ireland. In Dun Laoghaire Harbour, the authorities accountable for the pollution may be either, **Marina Marketing and Management Ltd.** a private company in charge of the marina area, or **Dun Laoghaire Rathdown County Council** a public entity in charge of the global harbour since

2018 (following a private management). Howth Harbour and Marina are fully managed by a private company: **Howth Yacht Club clg.**

When extending the targets, **other city authorities** may be approached such as Ville de Paris or London City. The Thames (London) is owned by the Crown but operated by **The Port of London Authority** - which would be the appropriate authority to promote the device to.

There will be **no general market** real entry since this Device is not adapted for individual and small private customers, but to very specifically identified customers which have been mentioned above - in charge of waterbodies.

3 Marketing and communication strategy

Now that the customers have been clearly identified, they need to be approached, know about the product and want to buy some. Several actions will be lead in this objective:

- **Solicit, Canvass and Contact directly potential customers**

The potential customers are not in very high number, they can therefore be carefully contacted individually, several times, in various ways with a very high quality approach, as the time allocated to communication allow. The strategy can be either to target the general secretary of these organisations (customers) through email, letter and then phone calls ; or to investigate on the managing people and head of these organisations and contact them directly which would give better chances of interest in purchasing, since they would be the ones have the decision making power (this can be done through LinkedIn or direct emails).

This Device will not make them have direct money profit. However it will save them future correlated costs related to Health-Care, Biodiversity, Cleanliness, etc. It also allows the Authority to achieve a better Corporate Social Responsibility (CSR) or improved Political Opinion among the general public. On this point, the Customer may plan the promotion of their investment in environment and their usage of the Device in the Media and on their own Internet platform. Finally and most importantly, many laws and regulations around the world currently oblige Authorities to be accountable and responsible for pollution and force them to reduce the amount of this pollution, or else Legal Sanctions are applied - sometimes very severe like in Indonesia (with administrative law sanctions (Articles 76-82), civil law sanctions (Articles 87-92), and criminal law sanctions (Articles 97-120))[2]

- **Communication material and digital promotion**

For this product there is no need to invest in physical communication material such as leaflets. However in the event that Glan Net gets to attend a conference, an environment fair, a summit, a festival or any kind of event where it can be promoted, then it may require the printing of roll-up banners for example.

The most important communication mean which has been already set-up are a website and social media pages. Glan Net Twitter page is available at @GlanNet_tcd, Instagram page at @GlanNet.tcd and LinkedIn at —Glan-Net. The sole purpose of these is to directly or indirectly draw attention from the media, environment organisations and potential customers stated above.



Figure 2: Glan Net has its webpage and social media pages.

- **Promotion through related Associations and Organisms, and Media**

Reaching out to associations, societies and organisms whatever scale they have (worldwide or very local) would be essential to promote the Device and its concept as well as potentially obtain feedback from experienced activists or experts. Many associations and NPO exist in Ireland such as Voice Ireland, Irish Environmental Network, the ESAI, Friends of the Earth Ireland, etc. The independent public body The Environmental Protection Agency may also be approached. Media especially those focused on environment, ocean pollution, nature, engineering and innovations in general should be sent a press-release explaining the product and adding a "storytelling" about the team to attract their audience.

- **Funding from Environmental Organisations and International Institutions**

In order to reduce the cost of the device to potential customers and therefore increase their numbers (for those who would originally not enter in their budget) it may be considered to get funding of this project by the European Union, the United Nations Environment Programme, The Ministry for the Environment (which announced supporting up to 1 million EURO of projects in this field for 2019/2020[3]) and other National and International funds.

It must not be forgotten that the aim of this project is not only to achieve financial balance (cover all costs including manufacturing costs and the engineers salaries) but most importantly to reduce Ocean Pollution. Therefore the more customers, leads obviously to a greater impact of this concept.

4 Installation and maintenance



Figure 3: The Stakeholders involved in the Device usage. The Customer Service is likely to be a contractor.

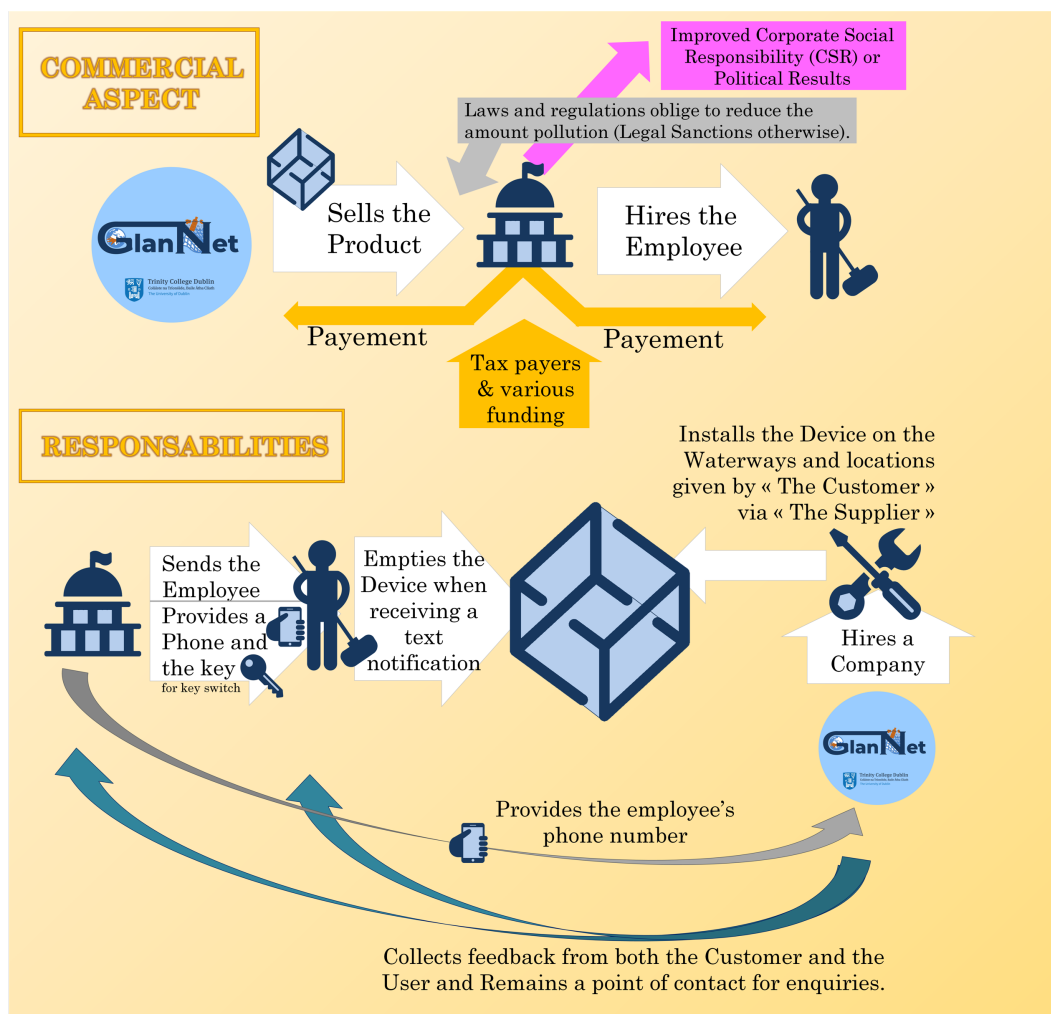


Figure 4: The Commercial aspect and the Stakeholders Responsibilities.

The Maintenance is likely to be managed by a contractor company which would be paid either from the purchasing price of the device or from a subscription to this maintenance service on a monthly or yearly basis - in which case Glan Net would be the intermediate between the Maintenance company referred to as "Customer Service" and the "Customer".

The Maintenance involves inspections and regular checks of the overall functioning of the Device: the Rigid Net Box shall not be blocking the flow of water with excess of litter on the sides; the Lifting System shall work correctly and the key switch not obstructed with dust; the Materials shall not be rusted or damaged; the Notification System shall work correctly - the User or the Customer have to be contacted to check this aspect. The potential Maintenance work involve repair of damaged fixing or parts if it does not affect the durability of the Device and its well-function, painting against corrosion on rusted parts, and other possible Modes of Failures (please refer to the Manufacturing Document, Section 6).

5 The Procedures and the scope of action of the User

How does the Device affect the User and the Customer?

One way the User (Collection Employee) and the Customer (Authority) are affected by this Device is in terms of workloads and hours of work. The collection of the Litter in all the devices (the time depends on the number of devices deployed in the area) requires some time for transport to the locations and for the Procedures of emptying. In order to minimise this, a GPS optimisation route of collection can help save transport time, and a time tolerance between the notification to the User (sent when the Device is full of litter) may allow the Authority to plan less collection days with optimisation. In order to reduce the cost of employment of the User, the Customer may consider using staff that is already dedicated to standard bin collection. Alternatively, it may be considered to have a contractor as "The User" such as hiring a waste collection company like they exist in Dublin: Greyhound Recycling, The City Bin Co. or Panda Waste.

Device Procedures and User involvement

The User equipment is relatively simple: a key and a mobile phone. These are kept by the user and are not present on the site of the device. The key allows the user and only him to activate the Lifting System with the secured key switch connected on site to the Device. This prevents any surrounding individual from using or disturbing the Device function. The Mobile phone receives notifications from the Device when this one detects a full load of litter. The notification is a text message sent to the phone number which contains the reference number of the Device - this Ref.No. allows the User to know which Device it is. The phone also contains an application with a Map displaying the locations of all the Devices and their related Ref.No. - managed by the authority for which the User works. Both pieces of equipment are provided to the User (the Collection Employee) by the Supplier (Glan Net) through the customer (the Waterway Authority).

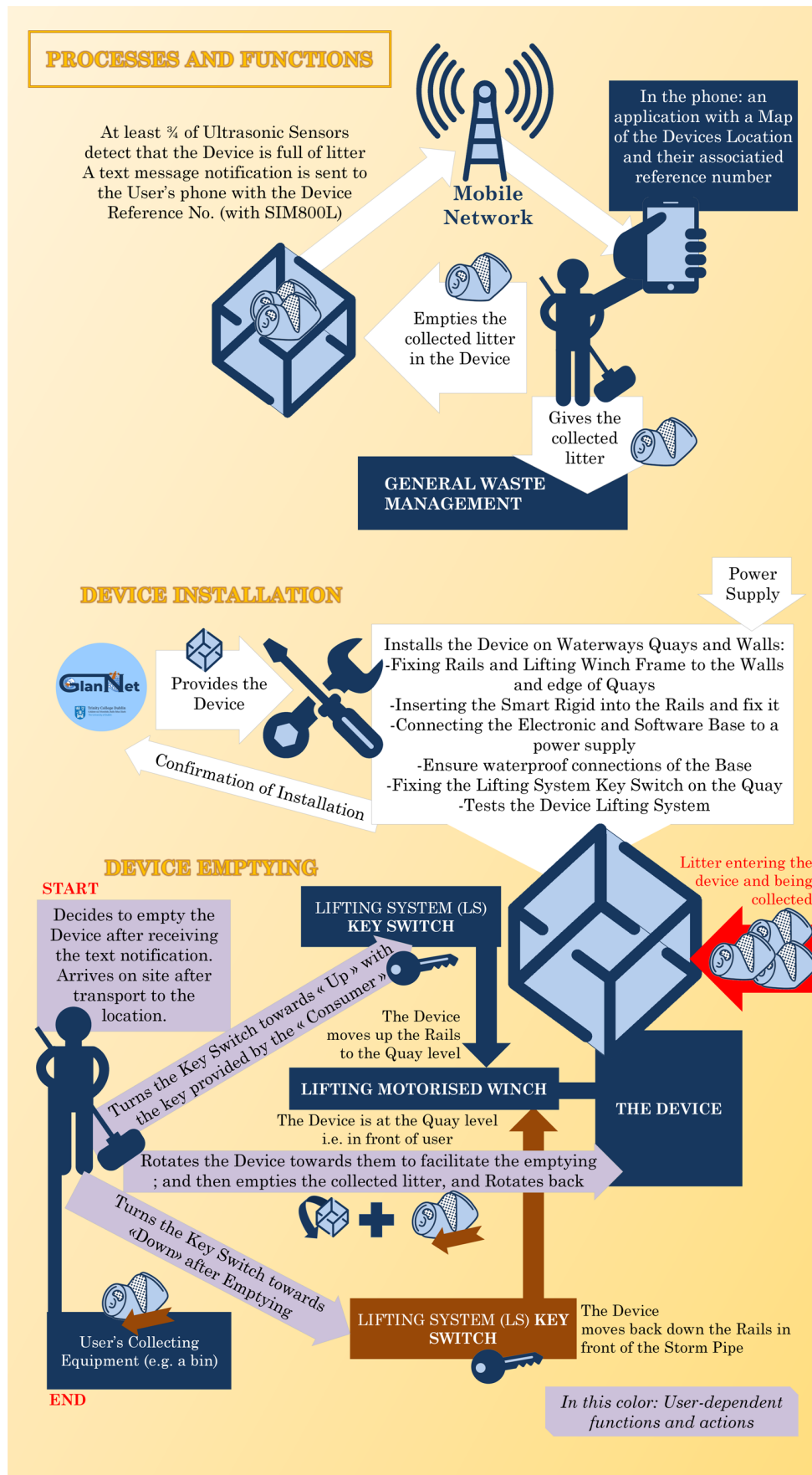


Figure 5: The processes and functions especially those involving the User.

6 User Procedures training strategy

Glan Net team will hold short courses in the form of a seminar to the Users related to Customers after signature of purchasing contracts. The Customers may also join this training if they desire. The Training focuses on five chapters:

- **the Organisational aspect** of this Device which includes the best optimisation of collection route and emptying techniques to gain time in the procedures. This part also covers the best spread of the Devices and the suitable times to collect the litter (low tide, less people activity, etc.).
- **the Risk and Safety aspect** which deals with the safety measures the User has to take during collection: from a safe mean of transport to an appropriate behaviour and procedure when lifting the Device and approaching the edges of the Quay. This part also emphasizes on all the potential causes of accident and the mistakes to avoid.
- **the Lifting System procedures** covers extensively the different actions which are detailed in section 5 of this present document.
- **the Notification and other Software aspects** covers extensively the usage of the smartphone mobile device from the Android application containing the map with the Devices, to how relating the Reference Number of the Device sent in a notification text to the map using the search function.
- **the post-collection opportunities** explores all the possibilities of recycling of the collected litter or of waste management adapted to the area where the Devices are implemented. This part also covers the best ways of collection: a movable bin (with wheels) or a small truck - depending on the Canals and Rivers concerned.

A summary guide book is also provided in addition to these short courses to all stakeholders: Users (Employees), Customers (Authorities), Customer Service (Maintenance body); as well as any interested future Customers having expressed significant interest in the Device.

7 Feedback collection and processing

Anonymous feedback and in-dept satisfactory interviews with the Customer and if possible with the User are performed in order to ensure a suitable usage and durability of the device as well as making sure the outside stakeholders are satisfied with the product. This will allow the Glan Net development team to improve some aspects of the Device Concept Design if needed, for later sales and implementation of new Devices in other cities.

The means by which this Feedback collection happens is both directly from Glan Net by contacting our customers or former customers, and also by gathering the data, feedback and intervention history of the "Customer Service" (i.e. maintenance body). Both anonymous and non-anonymous feedback on their experiences are collected.

Regular follow-ups and additional Seminar Training for new "Users" (i.e. Authority employees) are also offered to the Customer.

Perspectives

Finally, these first applications of the Device will allow the Glan Net Team to carry out further Research and Investigations in order to improve and extend the scope of action of the Concept in regard to Water Pollution. New perspectives will be explored following the first feedback which may lead to the development of a new version of the Smart Net Device.

References

- [1] Yann Blake Taron Wright Arthur Odum, Aimee Goodwin. Concept design document - glan net, <http://engineer.yannblake.com/glan-net/conceptdocumentglan-net/>. 2020.
- [2] Asmae Ourkiya. Funding opportunities for community-led projects and climate researchers. *Green News Ireland*, 2018.
- [3] I Suharta Utama. The challenges of water pollution: Enforcement of water pollution control. *Hasanuddin Law Review*, 2018.

Further Reading on Training and Seminars

Dr S.S. Ndeki, TRAINING REPORT, Warwick University, Available at: <https://cordis.europa.eu/docs/projects/cnect/7/216287/080/deliverables/TAS3-D11p8-Report-on-internal-training-V1p1.pdf>

The Members of the TAS, Report on internal training, Trusted Architecture for Securely Shared Services, Available at: <https://cordis.europa.eu/docs/projects/cnect/7/216287/080/deliverables/TAS3-D11p8-Report-on-internal-training-V1p1.pdf>