TUDelft

IDE Master Graduation Project

Project team, procedural checks and Personal Project Brief

In this document the agreements made between student and supervisory team about the student's IDE Master Graduation Project are set out. This document may also include involvement of an external client, however does not cover any legal matters student and client (might) agree upon. Next to that, this document facilitates the required procedural checks:

- Student defines the team, what the student is going to do/deliver and how that will come about
- Chair of the supervisory team signs, to formally approve the project's setup / Project brief
- SSC E&SA (Shared Service Centre, Education & Student Affairs) report on the student's registration and study progress
- IDE's Board of Examiners confirms the proposed supervisory team on their eligibility, and whether the student is allowed to start the Graduation Project

STUDENT DATA & MASTER PROGRAMME
Complete all fields and indicate which master(s) you are in

Family name	Brenes Piza	IDE master(s)	IPD ☐	DfI ✔	SPD ☐
Initials	S.	2nd non-IDE master			
Given name	Sofia	Individual programme *(date of approval)*			
Student number	5621755	Medisign ☐			
		HPM ☐			

SUPERVISORY TEAM
Fill in he required information of supervisory team members. If applicable, company mentor is added as 2nd mentor

Chair	Marijke Melles	dept./section	HCD / AED
mentor	Christina Schneegass	dept./section	HCD / HICD
2nd mentor	Ineke van der Ham		
client:	Leiden University		
city:	Leiden	country:	Netherlands
optional comments			

! Ensure a heterogeneous team. In case you wish to include team members from the same section, explain why.

! Chair should request the IDE Board of Examiners for approval when a non-IDE mentor is proposed. Include CV and motivation letter.

! 2nd mentor only applies when a client is involved.

APPROVAL OF CHAIR on PROJECT PROPOSAL / PROJECT BRIEF -> to be filled in **by the Chair** of the supervisory team

Sign for approval (Chair)

Name	Marijke Melles	Date	April 26, 2024	Signature	*M Melles*

CHECK ON STUDY PROGRESS
To be filled in **by SSC E&SA** (Shared Service Centre, Education & Student Affairs), after approval of the project brief by the chair.
The study progress will be checked for a 2nd time just before the green light meeting.

Master electives no. of EC accumulated in total _____ EC

Of which, taking conditional requirements into account, can be part of the exam programme _____ EC

X	**YES**	all 1st year master courses passed
	NO	missing 1st year courses

Comments:

Sign for approval (SSC E&SA)

Name _Robin den Braber_   Date _30-04-2024_   Signature _RdB_

Does the composition of the Supervisory Team comply with regulations?

YES	V	Supervisory Team approved
NO		Supervisory Team not approved

Comments:

Based on study progress, students is …

V	**ALLOWED** to start the graduation project
	NOT allowed to start the graduation project

Comments:

Sign for approval (BoEx)

Name _Monique von Morgen_   Date _1/5/2024_   Signature _MJvanMal_

Name student	Sofia Brenes	**Student number**	5621755

PROJECT TITLE, INTRODUCTION, PROBLEM DEFINITION and ASSIGNMENT
Complete all fields, keep information clear, specific and concise

Project title   Lost everyday: Wayfinding design for Developmental Topographical Disorientation

Please state the title of your graduation project (above). Keep the title compact and simple. Do not use abbreviations. The remainder of this document allows you to define and clarify your graduation project.

Introduction

Describe the context of your project here; What is the domain in which your project takes place? Who are the main stakeholders and what interests are at stake? Describe the opportunities (and limitations) in this domain to better serve the stakeholder interests. (max 250 words)

The project will explore the domain of Developmental Topographical Disorientation (DTD), aiming to understand the daily experiences, challenges, and needs of individuals living with this condition. DTD is a lifelong inability to orient in extremely familiar surroundings despite the absence of any acquired brain damage or neurological disorder. (Iaria and Burles, 2016). It is different than having poor navigation skills because people with DTD have a difficulty creating a mental cognitive map of their environment and get lost even in their known neighbourhood.

Studying DTD from a design perspective unlocks a potential to enhance the wayfinding experiences and overall quality of life of individuals with DTD. By mapping their lives and evaluating the spectrum of navigation skills, it can be possible to identify gaps in current solutions and opportunities for innovation. By considering an extreme user group such as this one, a more accessible interaction can be designed for the general population that doesn't have DTD but is also not good at orienting themselves. Collaboration with the Van der Ham Lab from Leiden University, offers the possibility of access to their research on people living with DTD and their expert guidance of this project.

While existing interventions, such as immersive spatial awareness training and navigation tools, seem to be very promising for the general population, there is still a need to tailor solutions specifically to the needs of individuals with DTD. Which is why this project would also seek to address the limitations in current technologies and design guidelines, ensuring inclusivity and usability for this user group. Through this project, I aim to explore and design for the development of effective and accessible technological innovations that empower individuals with DTD to navigate their environments with confidence and independence.

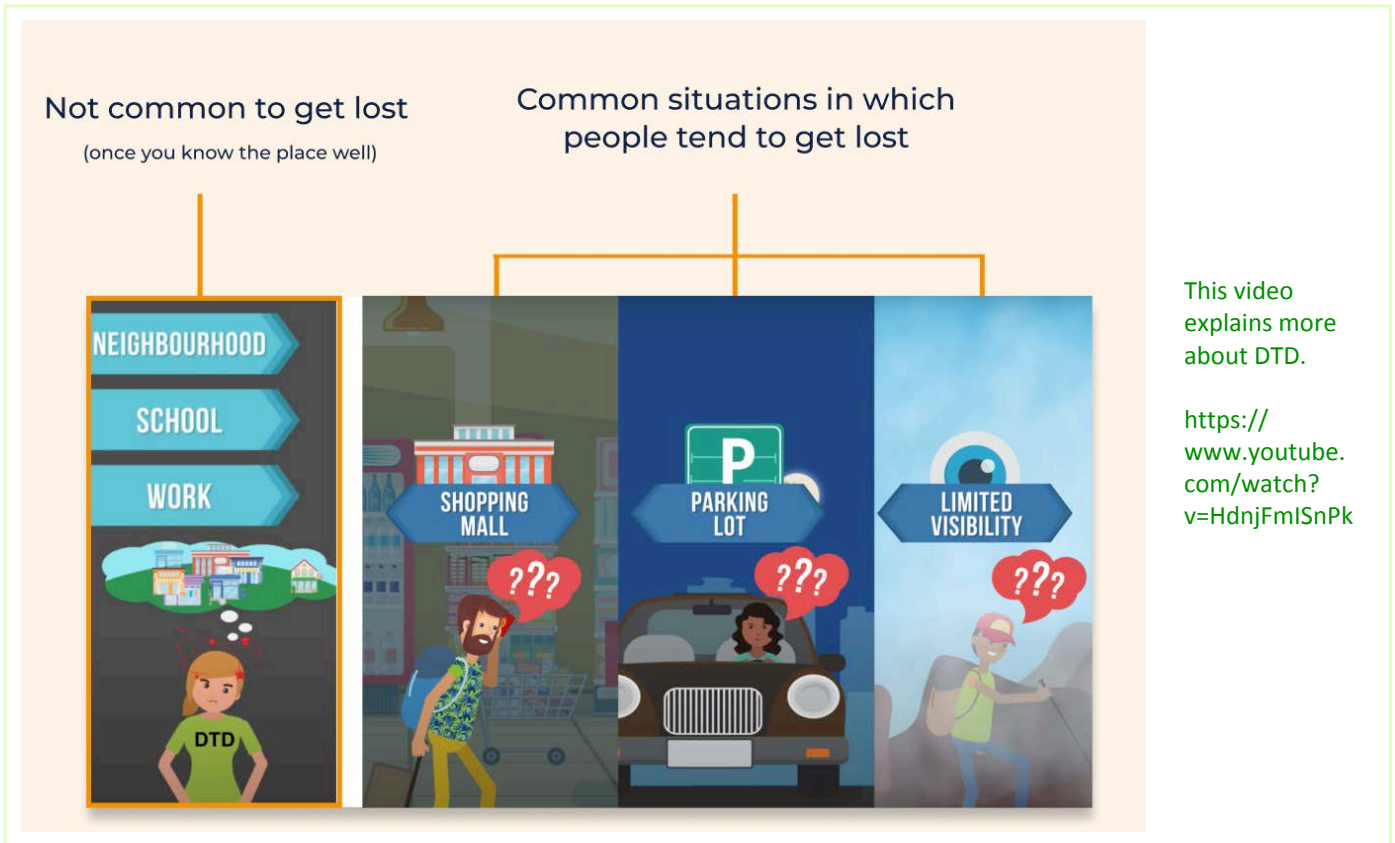➔ *space available for images / figures on next page*

This video explains more about DTD.

https://www.youtube.com/watch?v=HdnjFmISnPk

image / figure 1

See here a more detailed Gantt Chart of this schedule for this graduation project: https://miro.com/app/board/uXjVMMoTbXg=/?share_link_id=921957619815
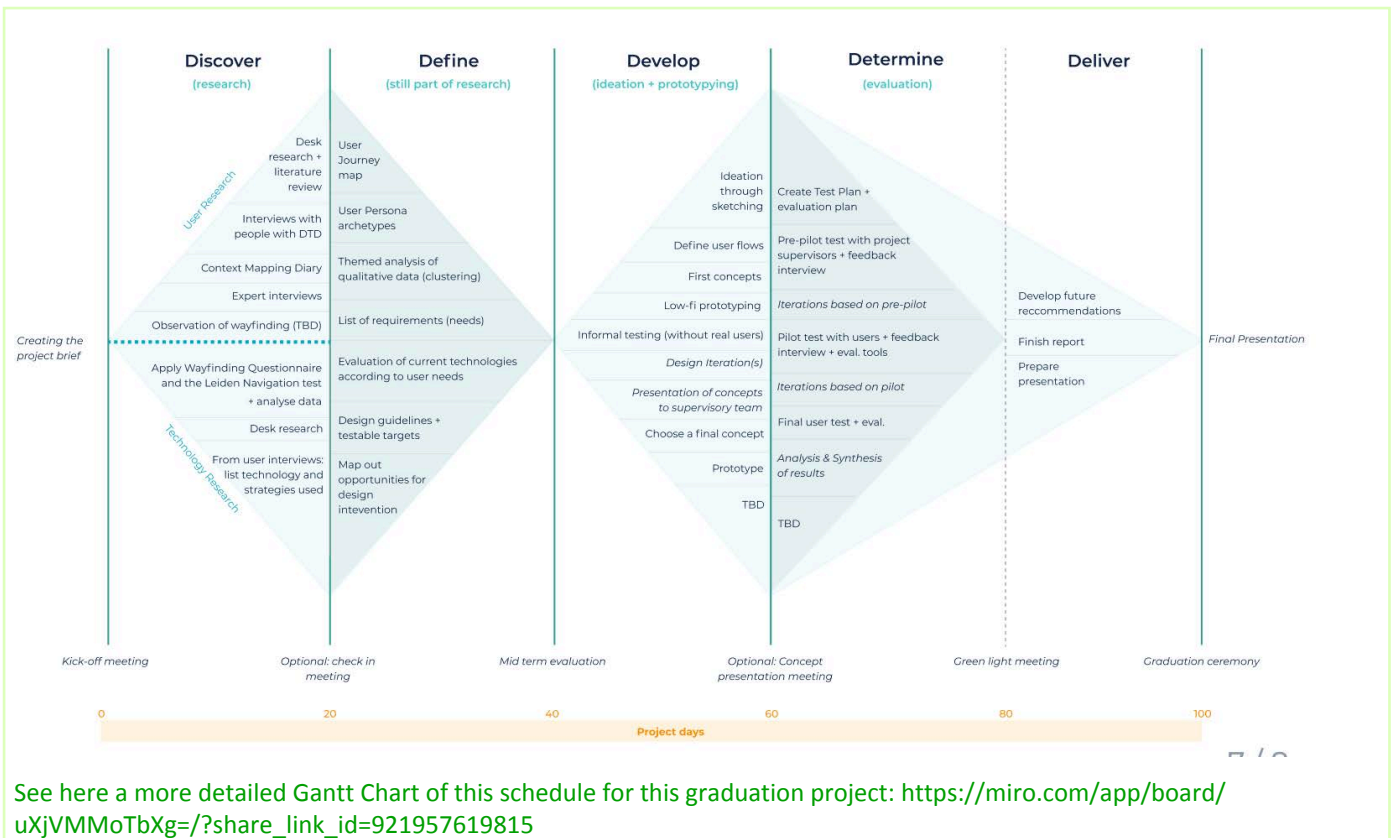
image / figure 2

Problem Definition

What problem do you want to solve in the context described in the introduction, and within the available time frame of 100 working days? (= Master Graduation Project of 30 EC). What opportunities do you see to create added value for the described stakeholders? Substantiate your choice.
(max 200 words)

Developmental Topographical Disorientation (DTD) is a relatively recent discovered condition. Therefore, there is a reduced amount of comprehensive studies and tailored solutions addressing the unique challenges faced by this user group. The research available to the public is very clinical and mainly focuses on the extreme cases of this condition, without showing the spectrum of people that may have a lesser degree of this cognitive disorder.

Existing interventions, while promising for the general population, often fail to meet the specific needs of individuals with DTD. This lack of awareness affects the daily struggles experienced by individuals with DTD, leading to increased feelings of disorientation and reduced independence in navigating familiar environments. Consequently, there is a pressing need to bridge this gap by conducting thorough research and developing innovative guidelines and technology specifically designed to enhance the wayfinding experiences of individuals with DTD. A design approach, offers an opportunity to study this condition from a user centred perspective and therefore can make the research more accesible to the general public.

This project seeks to address this critical problem by exploring the experiences, challenges, and needs of individuals with DTD and designing accessible technological innovations aimed at empowering them to navigate familiar and unfamiliar environments with confidence and independence.

Assignment

This is the most important part of the project brief because it will give a clear direction of what you are heading for.
Formulate an assignment to yourself regarding what you expect to deliver as result at the end of your project. (1 sentence)
As you graduate as an industrial design engineer, your assignment will start with a verb (Design/Investigate/Validate/Create), and you may use the green text format:

Investigate the perspective of people living with developmental topographical disorientation, in order to design a guideline and an (example) interaction to improve wayfinding experiences for individuals with low navigational skills in both familiar and unfamiliar environments.

Then explain your project approach to carrying out your graduation project and what research and design methods you plan to use to generate your design solution (max 150 words)

Because of the time constraint, this graduation must accommodate research and design in 100 working days. The following deliverables show what could be possible to achieve:

1. Mapping the lives of people with DTD (qualitative analysis of forum entries and interviews done by the Van der Ham Lab, interviews with 5-10 DTD users and also people who claim to have bad navigational skills, ethnographic observation, possibility of applying context mapping tools, user journey mapping, etc.)

2. Research current market solutions on navigation and wayfinding. Also evaluate the interaction of people with DTD with current technologies (also with video-games and navigation platforms such as Google Maps).

3. Design guidelines to design for people with DTD, (with a possibility to include people without DTD but with very poor navigation skills)

4. Apply those guidelines to an (example) "design intervention" in an experience they struggle with:

- Option 1: design an intervention on a recurrently challenging environment (for example jogging in their neighbourhood, or going to the supermarket).
- Option 2: design an intervention on a navigation tool that can improve its use for people with DTD. (for example new features on Google Maps like showing bigger landmarks or a more detailed navigation inside of buildings)

- Option 3: create a new tool that allows them to create their own map of specific environments they struggle with.

5. Evaluate the designed concept with DTD people. Propose recommendations for future continuation of the work

Project planning and key moments

*To make visible how you plan to spend your time, you must make a planning for the full project. You are advised to use a Gantt chart format to show the different phases of your project, deliverables you have in mind, meetings and in-between deadlines. Keep in mind that all activities should fit within the given run time of 100 working days. Your planning should include a **kick-off meeting, mid-term evaluation meeting, green light meeting** and **graduation ceremony**. Please indicate periods of part-time activities and/or periods of not spending time on your graduation project, if any (for instance because of holidays or parallel course activities).*

Make sure to attach the full plan to this project brief.
The four key moment dates must be filled in below

Kick off meeting	Friday 12th of April, 2024
Mid-term evaluation	Friday 7th of June, 2024
Green light meeting	Friday 6th of September, 2024
Graduation ceremony	Friday 11th of October, 2024

In exceptional cases (part of) the Graduation Project may need to be scheduled part-time. Indicate here if such applies to your project

Part of project scheduled part-time	all
For how many project weeks	25
Number of project days per week	4

Comments:

Working as a student assistant at a research project at the faculty and being in a part time board at a student association requires one day a week.

Motivation and personal ambitions

Explain why you wish to start this project, what competencies you want to prove or develop (e.g. competencies acquired in your MSc programme, electives, extra-curricular activities or other).

Optionally, describe whether you have some personal learning ambitions which you explicitly want to address in this project, on top of the learning objectives of the Graduation Project itself. You might think of e.g. acquiring in depth knowledge on a specific subject, broadening your competencies or experimenting with a specific tool or methodology. Personal learning ambitions are limited to a maximum number of five.
(200 words max)

For my final project as a Master's student in Design for Interaction at TU Delft, I really wanted to create a positive impact in people. My interest in DTD started after a family member of mine had a conversation with a neuropsychologist about how they "felt their memory declining with age". I got later introduced via-via to prof. van der Ham. and she told me about the existence of DTD and her work for the past few years.
I quickly became very interested in learning more about how the brain works and the different levels of orientation skills. Surprised by my own lack of survival skills without the current technology like Google Maps, I started thinking how dependent most of us are to these technological innovations. Unfortunately, most current designs are not made for people with different levels of navigational skill. This also led me to learn more about wayfinding for people with Dementia and more specifically Alzheimer's. Even though I found designing for people with Dementia fascinating, I decided to narrow down this project's scope towards designing for people with DTD. This because of the lack of information available and the novelty of the domain.
In the following 100 days, I hope to learn more about people who see the world differently than me and to be able to empathise with them enough to create an intervention that actually helps. I also hope that the results of this project have the power to help people with DTD, people with bad navigation skills (such as myself) and can also pave the way for a future positive impact on people with Dementia and brain injuries.