

UNWDMI  
Team Schnitzel

Project report

Theme 2.2  
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# Title page

**UNWDMI – Team Schnitzel***Project report*

This document encompasses the information used for the production of, the design choices about and the instructions for the use of the *Team Schnitzel Weather Service.*

This document is part of project for Theme 2.2 of the HBO-ICT education of the Hanzehogeschool Groningen.

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# Abstract

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# Introduction

Team Schnitzel (TS) is a part of the United Nations Weather Data Management Institute (UNWDMI). The team produces applications for clients of the UNWDMI. In the beginning of January 2017, the team was contacted by a client from Serbia, the University of Belgrade. The University was interested in the opportunities the UNWDMI could offer them. At a meeting in mid-January, it was decided that TS would produce an application to help the University with their research.

During the following two months, TS worked out their application. It is called the ‘*Team Schnitzel Weather Service*’ (TSWS). The TSWS receives localized weather data from weather stations from all over the world. The data is received via a collection server. Currently, this server is set up to receive up to a maximum of 800 weather stations at the same time. For the further use of this data, a distribution server is used. This server provides the clients with the requested data for their research.

Both servers are lacking resource overhead with the use of these applications. The resource allocation provided quite a few difficult design choices. But the provided TSWS still provided the data as requested by the client.

This report provides the background information of the whole production process of the TSWS. In the first chapter, the general information about the UNWDMI will be discussed. What is the UNWDMI, what is the data that is available to clients? The second chapter will provide information about the case of the University of Belgrade. What are the wishes of the clients and how do they want to access this data? Following in the third chapter, there will be an explanation about how the data that is available to the UNWDMI will be received from the first moment it enters the systems, to the moment that it is stored for the use in further applications. The actual processing of this data for the case of the client, begins in chapter four. This is where the calculations for the for their use cases are enlightened and where all other data modifications otherwise invisible to the client are discussed. In the fifth chapter, the part of the application with witch the client interacts will be explained. This also gives explanation about the use of the final product and how it connects to their provided points of research. Finally, in chapter six, the conclusion of the TSWS will follow.

# About the United Nations Weather Data Management Institute

The United Nations Weather Data Management Institute (UNWDMI) is an organization that provides global weather information for the use of local governments, regional weather forecasting bureaus and other organizations that have an interest in the provided data. It has its headquarters in Groningen, the Netherlands. It is a small organization of 90 people that receives weather data from all local weather institutes from countries connected to the United Nations.

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| C:\Users\Joost\AppData\Local\Microsoft\Windows\INetCacheContent.Word\UNWDMI_Global.png  Figure 1 – A rendering of the connected UNWDMI weather stations, across the globe. |

These local institutes provide weather data from their own countries to the UNWDMI in a standardized manner. In all, there are 8000 stations, all over the world. Figure 1 shows a representation of the locations over the globe.

The bulk of these stations lays within Europe, Northern America and Asia. All data stations provide an update every second. The UNWDMI collects this data in a centralized system. After the collection, the data will be used for applications built to the specific needs of its customers.

The UNWDMI currently has two systems to its disposal for these two tasks. Both systems are chosen to make optimal use of the available hardware, regarding the amount of data that needs to be processed. This means that every bit of processing power available in the system will be used to the fullest. The system will always produce the most accurate result possible.

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| |  |  | | --- | --- | | ***Team member*** | ***Department*** | | *Matthijs S. Bonnema* | Management | | *Joost P. de Vreede* | Service Management | | *Bart Bakker* | ICT Services | | *Jouke Y. Rienstra* | Application Development | | *Eran B. Machiels* | General Management | | *Danny D. Jager* | Data Acquisition |   Table 1 – The members of Team Schnitzel and their departments within the UNWDMI. |

Team Schnitzel (TS) is one of several production teams within the UNWDMI. The production team is a team of people from several people from departments within the UNDWMI. The current consistency of TS is displayed in table 1. Since all teams within the UNWDMI consist of several departments, expertise from all their working fields will contribute to a more streamlined product.

# Customer Requirements

# Analysis of data

# Data processing

# Data representation

# Conclusion

# References

Picture of globe on cover: clipartfest.com

All chart renders use part of the OpenStreetMap and are rendered in QGIS, as seen on pages 3 and , © OpenStreetMap