IoT SOLUTION OPTIMIZER

SERVICE DESCRIPTION

T **VOOR ONDERNEMERS**

CONTENTS

1 INTRODUCTION

When developing battery-powered IoT applications in conjunction with the complex LTE-M and NB-IoT low power wide area (LPWA) radio technologies, a product development that relies on multiple trial-and-error design iterations is no longer necessary. You can significantly reduce your development effort and be less prone to surprises and setbacks during the product lifecycle by using Computer Aided Engineering software (CAE) for planning and developing IoT applications.

With the IoT Solution Optimizer (ISO) service, T-Mobile offers a web portal and unique CAE development tool that helps you save time and money when developing new IoT solutions. This digitalization tool allows you to model, simulate and optimize your design even before you build a prototype. Performance assessments that previously took weeks to complete can be modelled with high accuracy in just seconds. Avoid time-consuming pitfalls and significantly shorten your time-to-market!

This service description provides an overview of the different components of the IoT Solution Optimizer ecosystem.
Besides this service description, there are other documents for ISO online: there you will find the ISO Product Flyer and License Leaflets. After logging in on the ISO development tool you will find an User Guide and a FAQ Guide in English. All documents are in PDF format and can be downloaded from our website.

1.1 What is the IoT Solution Optimizer?

ISO development tool
The IoT Solution Optimizer tool (ISO) is computer aided engineering (CAE) software offered as a SaaS service from the cloud. It is a development tool that enables the digital modeling, simulation and optimization of cellular, battery powered LPWA IoT applications, and is a part of the ISO website. ISO uses the industry's largest, integrated database of performance measurements for a large cross-section of certified IoT hardware (radio modules, antennas and batteries) that is placed in its product shelves. When configuring your IoT project, you simply select the hardware from the tool's product catalog. The pre-measured, qualified data is sourced from professional mobile network operator and supplier laboratories, and are used in the calculations underlying your simulations. The accuracy of these calculations reach 94%, leading to a high degree of accuracy and reliability for diverse deployment scenarios

ISO website
The ISO development tool is available online, in its own website. This page acts as a portal and provides a rich ecosystem including an IoT documentation library and knowledge base, in addition to links for IoT-related products, services and our T-Mobile Business IoT website.

2   ORDERING

2.1   Essentials

- You need to order a license to use the ISO development tool;
- To order licenses for the ISO development tool, you need a personal computer with Internet access and an up-to-date web browser;
- Whenever an update of the ISO development tool is made available, it is recommended to clear your browser cache to be able to use new functionalities. Users who opt-in to receive service notifications will be alerted when such updates occur; this option is available in your settings profile.

2.2   Ordering process

Please visit our ISO website: tmnl.iotsolutionoptimizer.com

From the main menu, go to the **Services** menu and choose the **IoT Solution Optimizer** menu option.

- If you already have a license, you can simply select the link to log in to the ISO tool;
- If you don't have a license yet, you will see our range of license types for the ISO tool on this webpage. You can make your choice here. Once you have made a selection, you will be taken to a web form where you can order the license from T-Mobile.
  Important: when ordering, please enter the email address of the new user. The new user has to personally receive the activation email and log in with using that email address.

2.3   Acceptance & order confirmation

- If you have an office with a billing address in The Netherlands, your order will be accepted.
- After our acceptance, you will receive an email from us with the order confirmation.

2.4   Invoicing

- After approximately 1 week you will receive a paper invoice at the billing address you provided.
- Unfortunately, we do not support online payment services or electronic invoicing for payment of ISO licenses.

2.5   License activation

After accepting the license, you will receive an email from T-Mobile confirming your license and instructions.

3   ACCESS AND USE OF THE TOOL

You can get started right away once you receive the activation email for your license.

Tip: Save the ISO website as a favorite in your web browser:

tmnl.iotsolutionoptimizer.com

3.1   Essentials

To access and use the ISO website you will need:

- a personal computer with internet access and an up-to-date web browser

To access and use the ISO development tool, you additionally need:

- an active license for the ISO development tool;
- recommended: link your account to a smartphone by using an authenticator app for logging in with 2FA (e.g., Google Authenticator, Microsoft Authenticator, etc.). Find the relevant options in your settings profile.
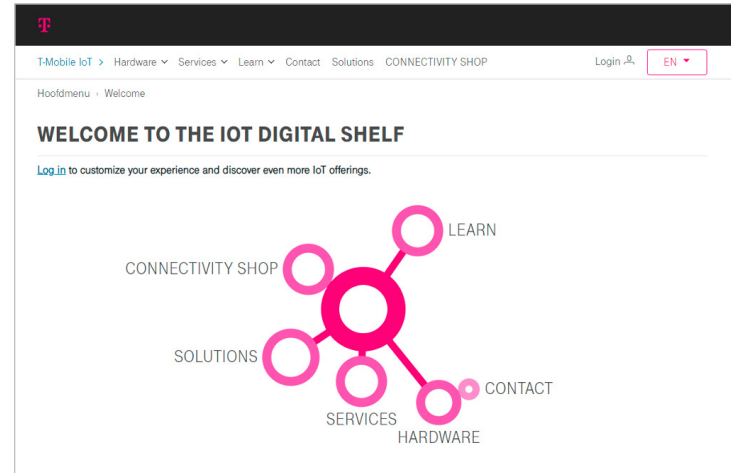
3.2   ISO website

The IoT Solution Optimizer (ISO) consists of a comprehensive website with an IoT library and references to IoT services, solutions and products. One of the services offered herein is the ISO tool which requires a login.

The website is multilingual: in addition to Dutch, it supports many other languages such as English, Chinese and Polish.

The main menu of the site offers the following topics:

Home	the central circle takes you to the T-Mobile Business IoT website
Learn	our IoT documentation library, including an overview of certified IoT hardware
Contact	select this to contact our IoT experts
Hardware	a catalog and selection guide for IoT hardware and manufacturers
Services	brings you to the ISO tool and other test and consultancy services
Solutions	consult the IoT portfolio of T-Mobile
Connectivity Shop	webshop with the online available IoT connectivity products of T-Mobile

3.3 Accessing the ISO development tool

1.   Visit the ISO website: tmnl.iotsolutionoptimizer.com
2.   If you have an account on the website, go to the **Services** menu item and choose the **IoT Solution Optimizer** login option;
3.   Follow the link to log in to the ISO development tool.

2-Factor Authentication

When logging in to the ISO tool, 2-Factor Authentication (2FA) is used to ensure access to your data is secure. You have two options here, authentication by means of an:

- 2FA email - the 2FA email with a code will be sent to the email address you registered with;
- Authenticator-app on your smartphone.
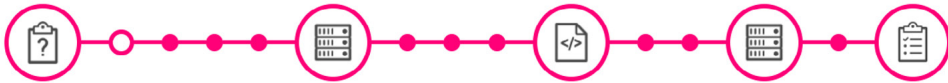
3.4 Using ISO, User Guide and FAQ

Welcome page

After logging in, you will be taken to the homepage of the ISO development tool. This is called the "Welcome" page. After accepting the terms and conditions of use, you can:

- create a 'New Project';
- open 'My Projects' and continue working on a previously saved project;
- download and browse the User Guide;
- consult the FAQ Guide.

Navigation

As you set up and configure your project, you can check where you are in the process by using the service wizard (flow diagram) shown at the top of the screen:

If you are at the end of your project and you want to make an adjustment in any previous step, you can simply click with the mouse on the desired node that represents this step in this service wizard. This returns you to that step. To ensure the validity of your projects, any changes made retroactively will be automatically checked for compatibility with your other selections; The ISO tool will prompt you regarding any modifications that may be necessary.

Online help

When setting up your project, you need to enter various kinds of technical data. You do this during the project configuration steps. A large number of topics and concepts in the ISO service have been described in an integrated IoT encyclopedia accessible via the clickable links (underlined words). For instance, selecting "NB-IoT" will open a pop-up card giving a technical description of this technology. Additional links in this card will guide the user to other topics in the IoT encyclopedia.

Additionally, you can consult the **User Guide** and the **FAQ Guide**. Both documents are available as downloadable PDF documents on the **Welcome page** of the ISO development tool. These documents are currently only available in English.

4   SUPPORT

4.1   Required knowledge level

The IoT Solution Optimizer is a professional development tool. Although the tool offers a guided journey through the project configuration flow and integrated IoT encyclopedia, users are expected to:

- have completed higher technical education in the field of Information & Communications Technology;
- be familiar with Internet protocols, protocol stacks, modem hardware, and network concepts;
- have experience with development work and work independently.

4.2   Online self-support

The entire setup is such that the ISO tool user can help himself with the digital resources available, without assistance from others:

- in the workflow of the tool, the technical terms and topics are clickable for further explanation;
- additionally the user can consult the User Guide and FAQ Guide for an explanation of the operation and input of data. Both documents are available as downloadable PDF documents on the Welcome page of the ISO tool. These documents are currently only available in English.

4.3   Reporting disturbances, technical issues and bugs

If you would like to report a malfunction, technical issue or bug to us, or simply require support, please proceed as follows:

1. Visit the ISO website: tmnl.iotsolutionoptimizer.com
2. Choose the menu item **'Contact us'** from the main menu
3. Select the subject **'IoT Solution Optimizer'** on the contact form.
4. Report the fault/issue/bug in the *'Enter your question here'* field and
5. **Submit** the form.

A colleague from the ISO helpdesk will contact you as soon as possible via email.

5   CONTRACT PERIOD AND TERMINATION

5.1   Trial license

The free trial license has a duration of 3 months and ends automatically after this period. After this period, you can no longer use the ISO tool.
Upon expiry your project data will be kept for another 3 months after which the data will be deleted. You can recover access to project data by contacting us to extend your license period. Project configuration results can be downloaded as PDF files of the Project Summary Report.

5.2   Customer license

The customer license has a duration of 12 months and ends automatically after this period. After this period, you can no longer use the ISO tool.
Upon expiry your project data will be kept for another 3 months after which the data will be deleted. You can recover access to project data by contacting us to extend your license period. Project configuration results can be downloaded as PDF files of the Project Summary Report.

6 GETTING MORE LICENSES

You can order more licenses at any time through our ISO website. Please refer to chapter 2.2 for ordering information.

7 GLOSSARY OF TERMS

CAE	Computer Aided Engineering (software)
IoT	Internet of Things
ISO	IoT Solution Optimizer; A portal to an IoT library, products & services including the ISO development tool
ISO-tool	CAE tool for digital simulation & optimalization of IoT-applications. Part of the ISO portal
LTE-M	LTE Cat.M radio technology optimized for battery operated IoT-devices with enhanced coverage
NB-IoT	Narrowband IoT radio technology optimized for battery operated IoT-devices with enhanced coverage
SaaS	Software as a Service