
Read the Docs Template Documentation

Release 1.0

Read the Docs

Sep 03, 2018

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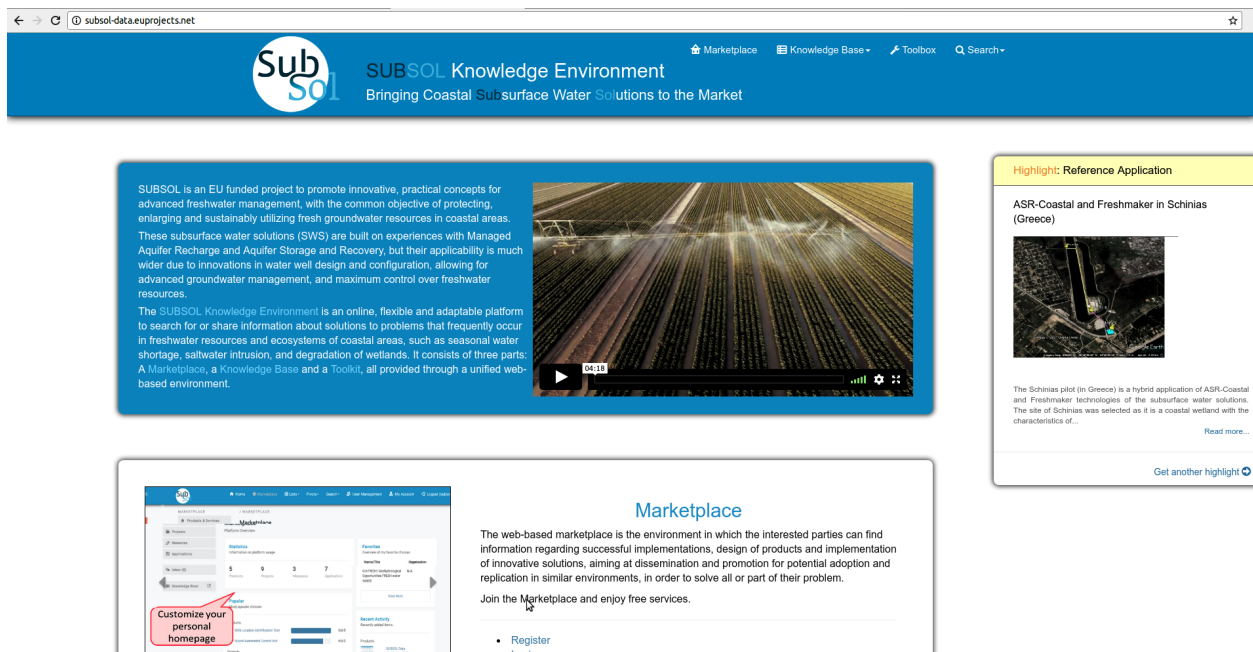
Contents:

CHAPTER 1

Subsol walkthrough

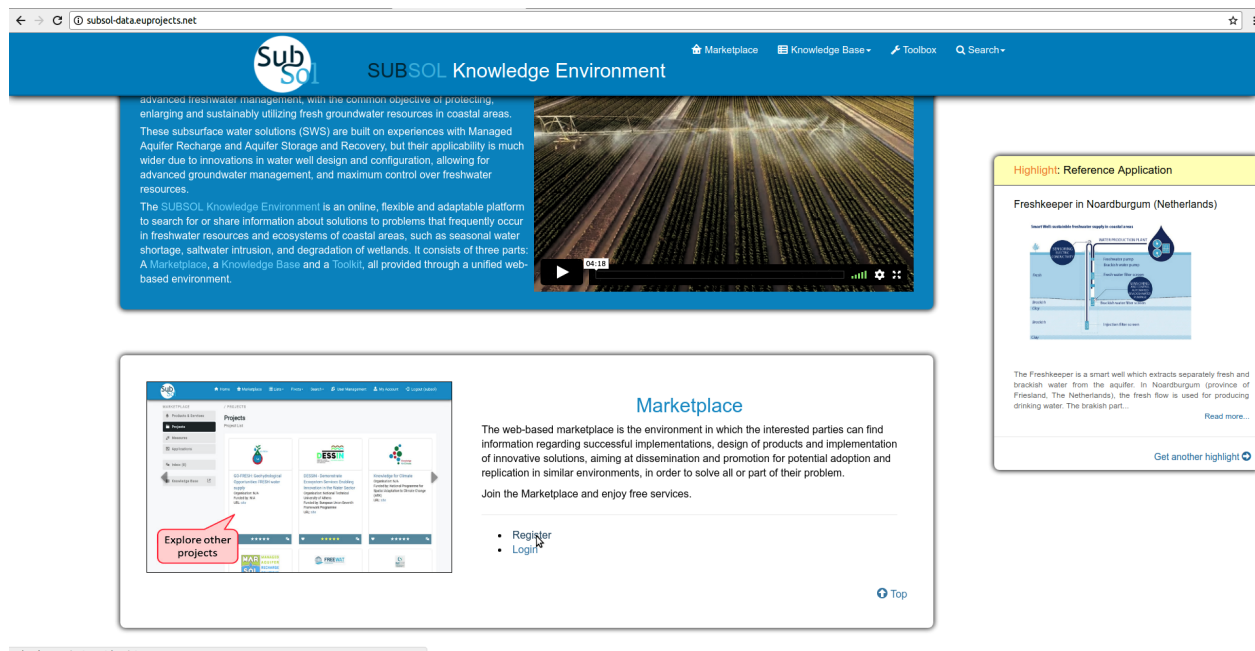
1.1 Create Account

- When a user access the Subsol site (<http://subsol-data.euprojects.net/>) the following screen is shown:

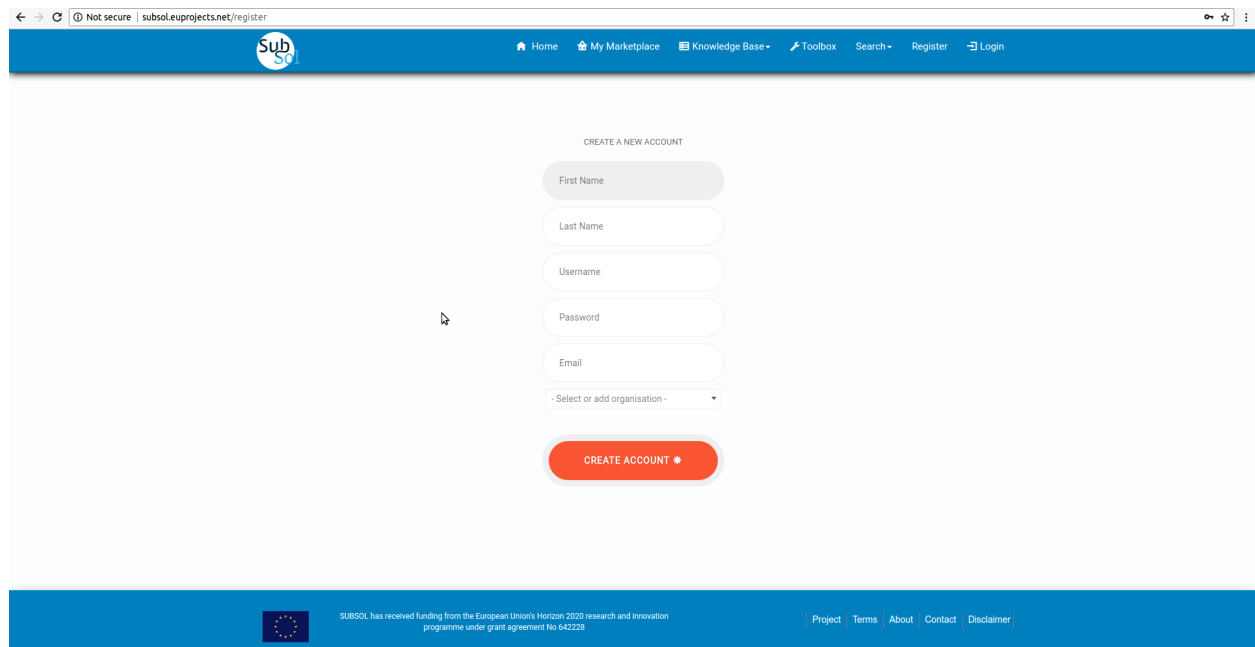


- Click on “Register” button.

Read the Docs Template Documentation, Release 1.0



- Provide account information.



- Click on “Create Account” button.

CREATE A NEW ACCOUNT

Paris

Liapis

paris81

liapis.paris@gmail.com

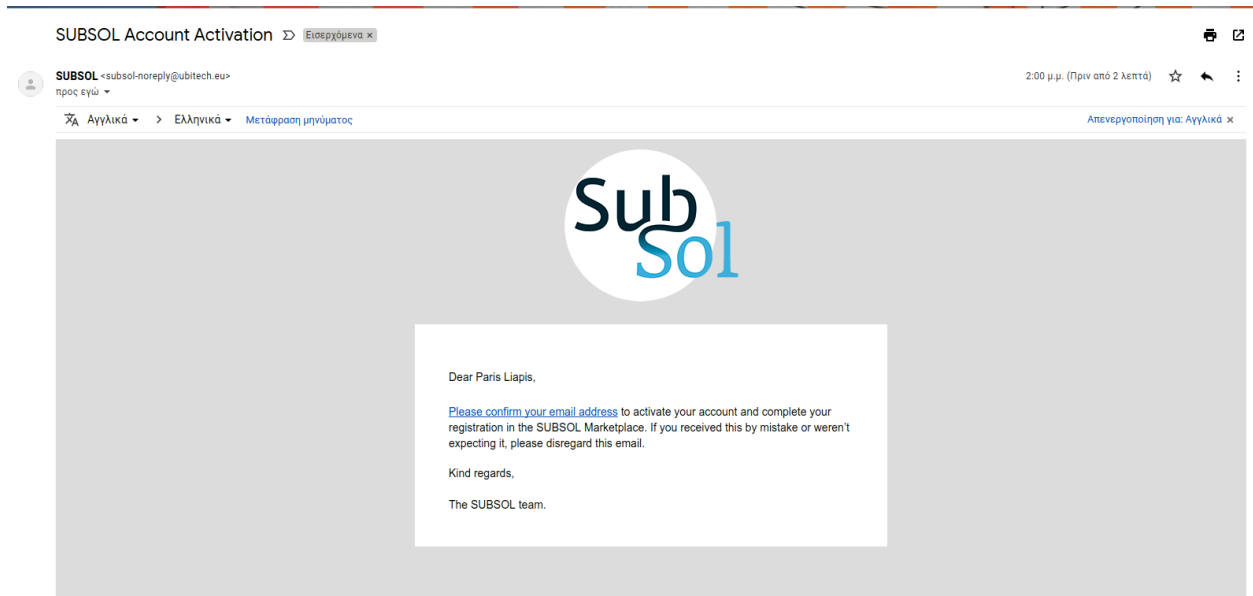
Ubitech

CREATE ACCOUNT

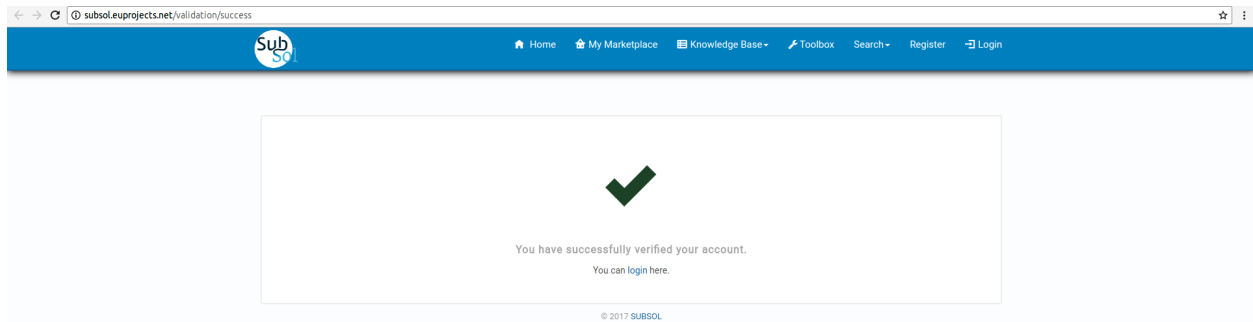
SUBSOL has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 642229

Project | Terms | About | Contact | Disclaimer

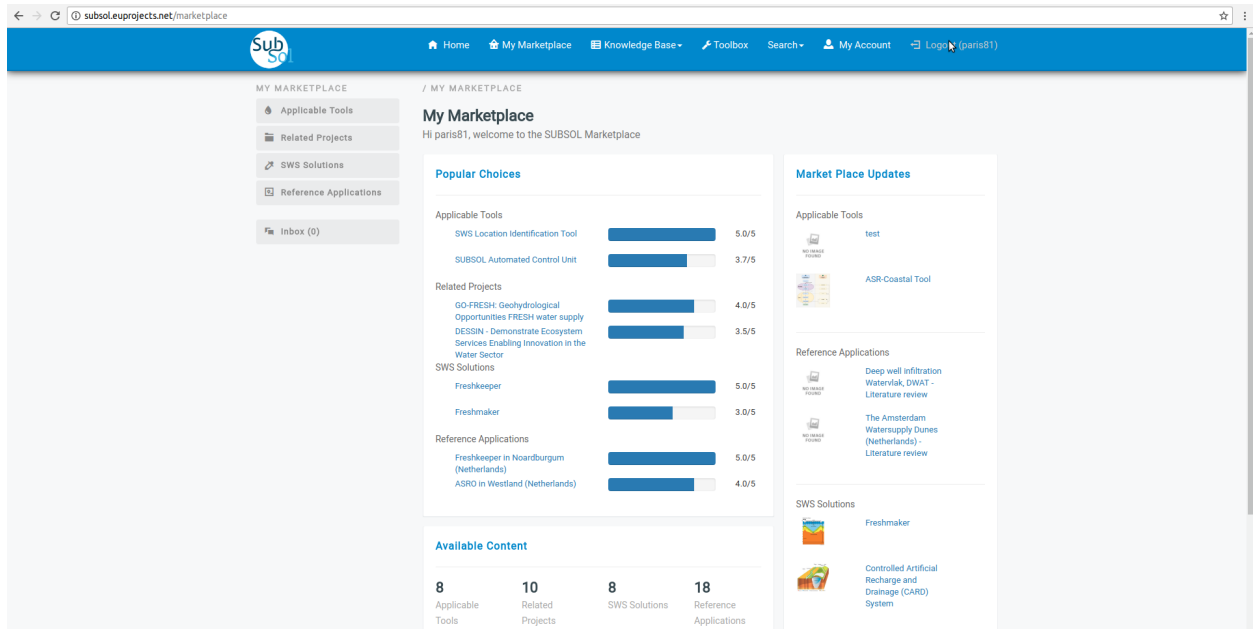
- Go to your email and click on Subsoll account information link.



- Your Account has successfully verified.



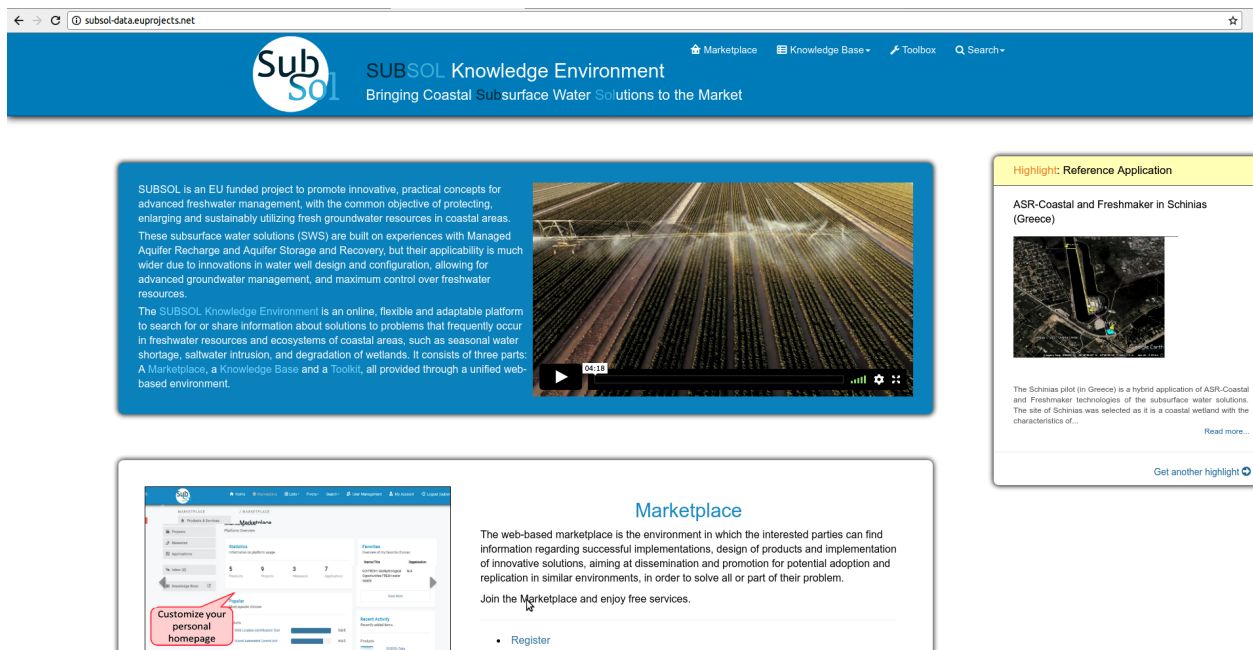
- Now you can login to your account.



CHAPTER 2

Dashboard

Access to the platform is provided through the URL <http://subsol-data.euprojects.net/>, where the end user is able to view introductory information regarding the set of services provided through the platform.



From the dashboard, access is provided to the Knowledge Base, the Marketplace and the Toolbox. Free access is provided to the public part of the Knowledge Base, while in the rest parts registration is required.

2.1 Login to account

SubSOL Knowledge Environment

Marketplace Knowledge Base Toolbox Search

Products & Services

Upload your own products and services

Marketplace

The web-based marketplace is the environment in which the interested parties can find information regarding successful implementations, design of products and implementation of innovative solutions, aiming at dissemination and promotion for potential adoption and replication in similar environments, in order to solve all or part of their problem.

Join the Marketplace and enjoy free services.

- Register
- Login

Top

Knowledge Base

The knowledge base provides information on what methods are available regarding technical solutions for groundwater management in areas with brackish or saline aquifers, what has already been applied and tested under different contexts and what were the main lessons learned.

SWS Solutions

A set of innovative, practical concepts for protection, enlargement and utilization of freshwater resources in coastal areas.

Reference Applications

Collected experiences, case studies and information for sustainable groundwater management in coastal areas.

Top

Highlight: Applicable Tool

SWS Location Identification Tool

The SWS Location Identification Tool is a spatial assessment tool that helps to scan an area to identify locations that can be suitable for applying a subsurface water solution (this can be any one of... Read more...)

Get another highlight

- Click on “LOGIN” button.

SubSOL

Home My Marketplace Knowledge Base Toolbox Search Register Login

LOGIN WITH YOUR ACCOUNT

paris81

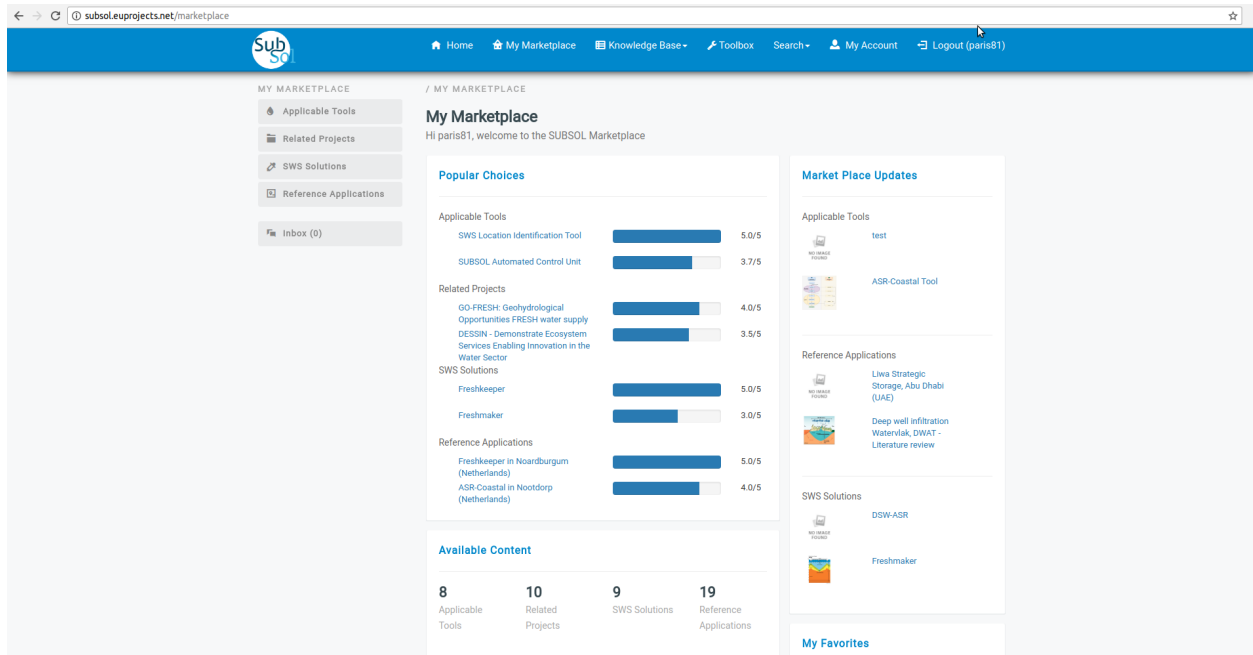
LOGIN

Create Account

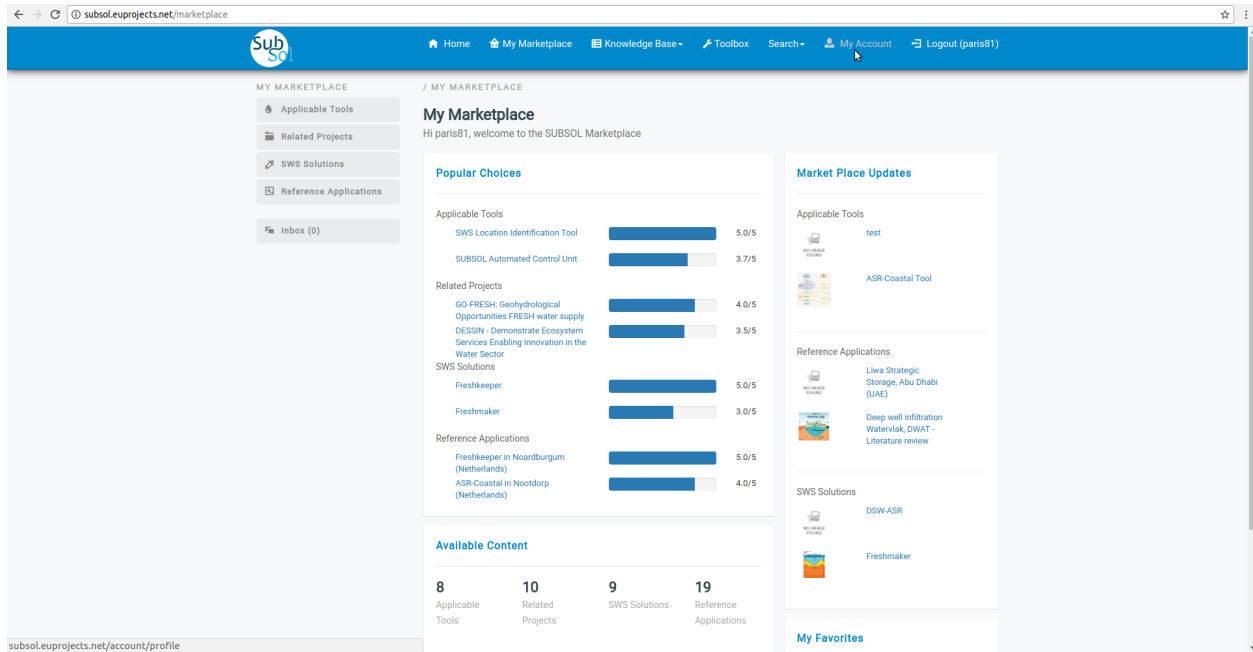
SubSOL has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 642229

Project Terms About Contact Disclaimer

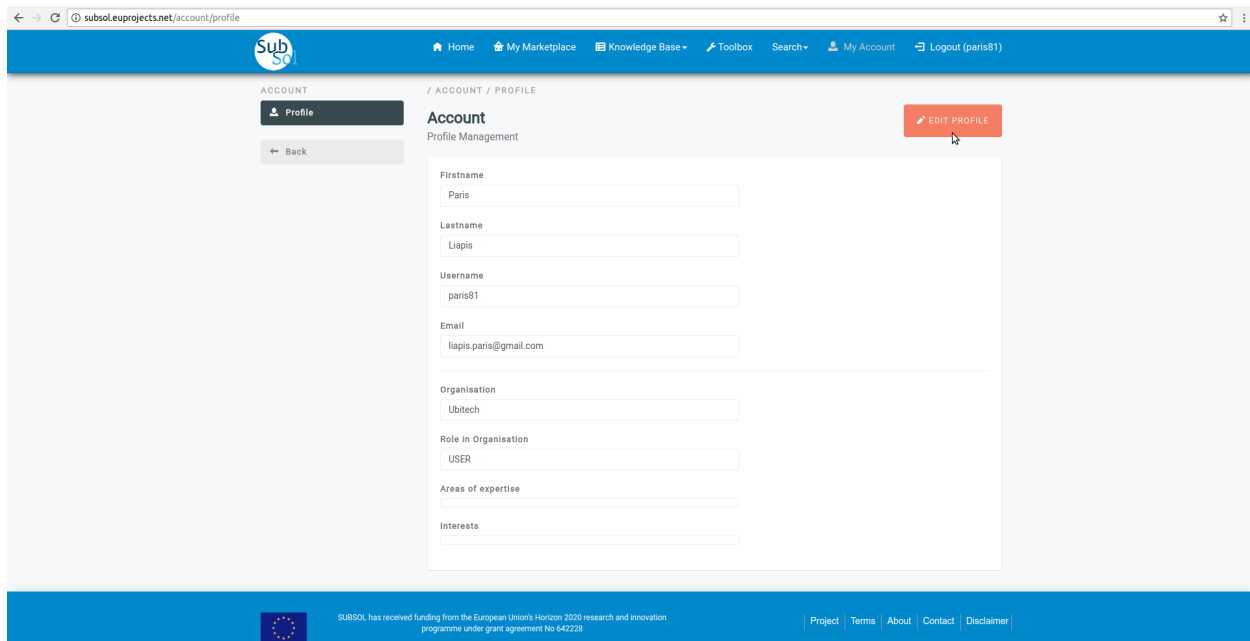
- You have successfully “LOGIN” to your account.



2.2 Edit account

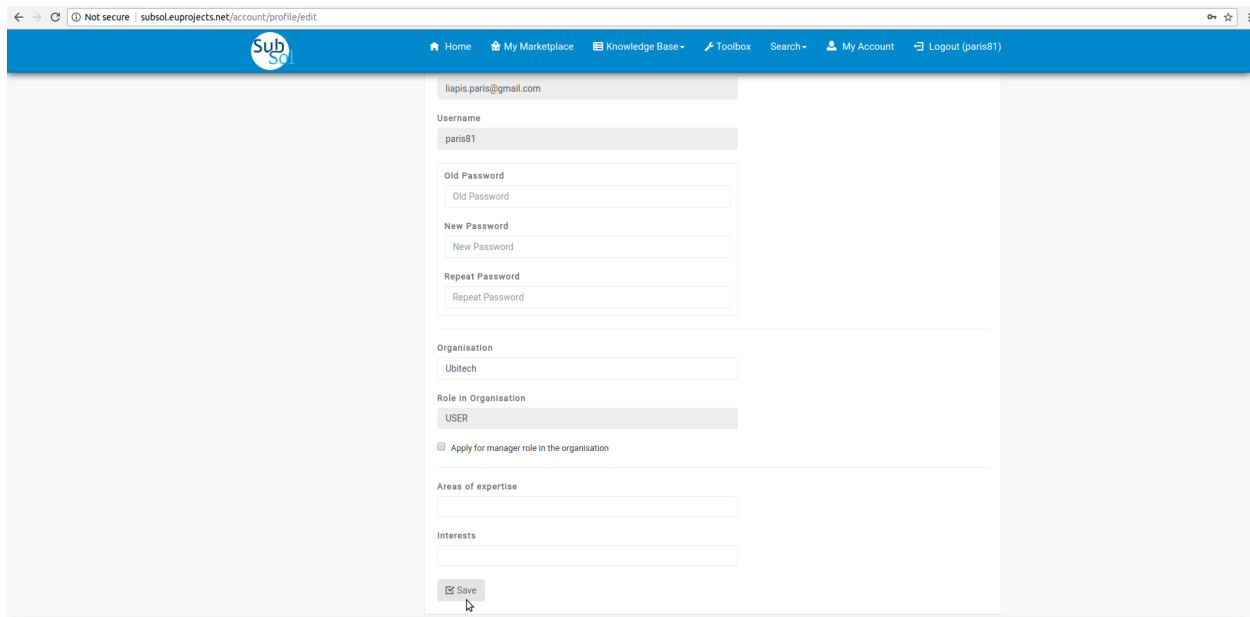


- Click on “Edit Profile” button.



The screenshot shows the 'Account / Profile' page on the SubSol website. The page has a blue header with the SubSol logo and navigation links: Home, My Marketplace, Knowledge Base, Toolbox, Search, My Account, and Logout (paris81). The main content area is titled 'Account' and 'Profile Management'. It contains a form with the following fields: Firstname (Paris), Lastname (Liapis), Username (paris81), Email (liapis.paris@gmail.com), Organisation (Ubitech), Role in Organisation (USER), Areas of expertise, and Interests. A red 'EDIT PROFILE' button is located in the top right corner of the form. A 'Back' button is in the top left corner of the form area. The footer of the page includes a European Union logo, a statement about funding from the Horizon 2020 programme, and links to Project, Terms, About, Contact, and Disclaimer.

- Provide your changes and click on “Save” button.



The screenshot shows the 'Account / Profile' page with the 'edit' URL. The form is partially filled with the same information as the previous screenshot. The 'Old Password' field is empty, and the 'New Password' and 'Repeat Password' fields are also empty. The 'Save' button is located at the bottom of the form. The 'Apply for manager role in the organisation' checkbox is unchecked. The footer of the page is the same as the previous screenshot.

- A pop-up message confirms that you have successfully updated your account.

← → ↻ subsoleuprojects.net/account/profile/ 🔍 ☆ ⋮

SubSo Home My Marketplace Knowledge Base Toolbox Search My Account Logout (paris81)

ACCOUNT / ACCOUNT / PROFILE

Profile

← Back

Account Profile Management EDIT PROFILE

Firstname
Paris

Lastname
Liapis

Username
paris81

Email
liapis.paris@gmail.com


Organisation
Ubitech

Role in Organisation
USER

Areas of expertise

Interests

User has been updated
View Activity

 SUBSO has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 642228

Project Terms About Contact Disclaimer

SUBSOL Type of Users

3.1 Knowledge Base Editor

- Editor

He has access to the public and private part of the Knowledge Base and is able to add/edit/delete content in all the database tables of the SUBSOL database (except the part of tables with fixed content).

- Anonymous User

He has access to the public part of the online platform and the Knowledge Base. He is able to see custom views and perform simple and advanced queries over the available content

3.2 Marketplace

- Organization Representative

He has access to the Marketplace and is able to add/edit/delete content that is associated with his organization (Products & Services, Projects, Measures, Applications). He is also responsible for interaction with interested parties with regards to the items belonging to the organization (e.g. expression of interest for a product). He is able to view all the content made available regarding Products & Services, Projects, Measures, Applications.

- Simple User

He has access to the Marketplace and is able to view all the content made available regarding Products & Services, Projects, Measures, Applications. He is able to express interest for specific items, provide rating for items and initiate communication with the organization representatives.

3.3 Administrator

He has access to all parts of the online platform and is able to add/edit/delete any content in the SUBSOL database.

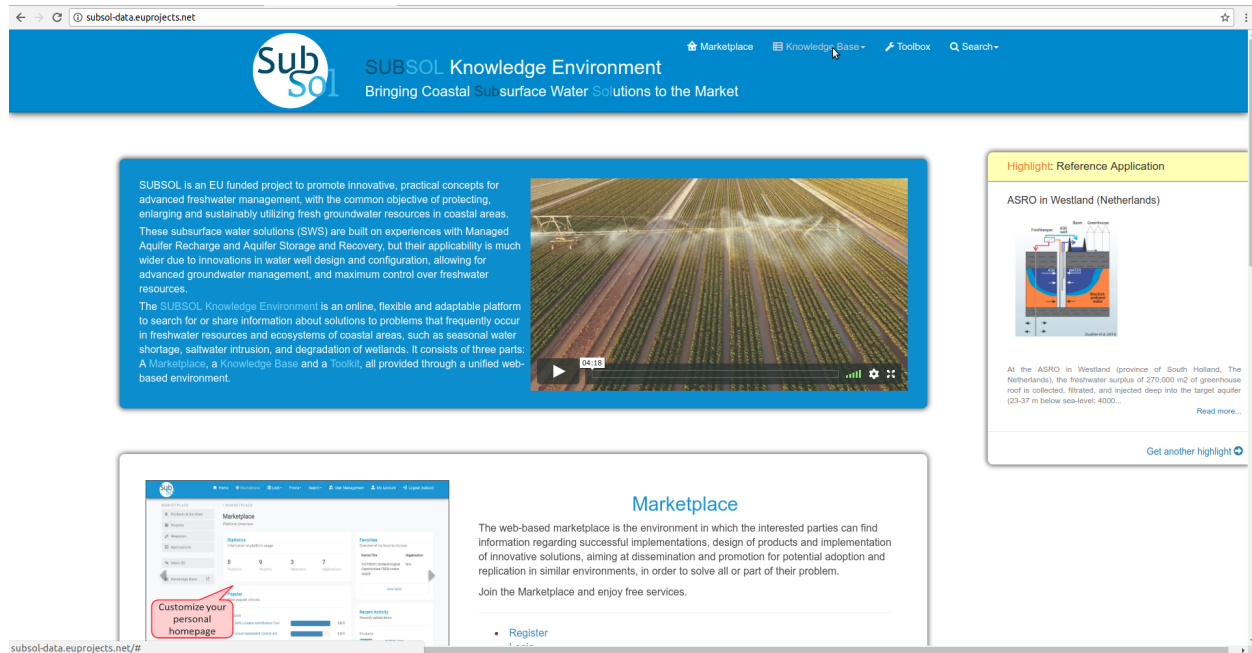
CHAPTER 4

Knowledge Base

4.1 Public Services

1. Workflow

- Click on the “Knowledge Base” drop-down list.



- Select the preferred category from the dropdown list. (In this use case “SWS SOLUTIONS”)

SUBSOL is an EU funded project to promote innovative, practical concepts for advanced freshwater management, with the common objective of protecting, enlarging and sustainably utilizing fresh groundwater resources in coastal areas. These subsurface water solutions (SWS) are built on experiences with Managed Aquifer Recharge and Aquifer Storage and Recovery, but their applicability is much wider due to innovations in water well design and configuration, allowing for advanced groundwater management, and maximum control over freshwater resources. The SUBSOL Knowledge Environment is an online, flexible and adaptable platform to search for or share information about solutions to problems that frequently occur in freshwater resources and ecosystems of coastal areas, such as seasonal water shortage, saltwater intrusion, and degradation of wetlands. It consists of three parts: A Marketplace, a Knowledge Base and a Toolkit, all provided through a unified web-based environment.

Marketplace

The web-based marketplace is the environment in which the interested parties can find information regarding successful implementations, design of products and implementation of innovative solutions, aiming at dissemination and promotion for potential adoption and replication in similar environments, in order to solve all or part of their problem. Join the Marketplace and enjoy free services.

• Register

Highlight: Reference Application

ASRO in Westland (Netherlands)

At the ASRO in Westland (province of South Holland, The Netherlands), the freshwater surplus of 270,000 m³ of greenhouse roof is collected, filtered, and injected deep into the target aquifer (23-37 m below sea-level; 4000...

[Read more...](#)

[Get another highlight](#)

- Select an item to view detailed information.

SWS solutions

A set of innovative, practical concepts for protection, enlargement and utilization of freshwater resources in coastal areas

Freshmaker

The Freshmaker is designed to enlarge, protect, and utilize freshwater lenses in brackish-saline aquifers using two horizontal wells. A deep horizon...

Freshkeeper

The Freshkeeper protects shallow abstraction wells in a freshwater layer underlain by a low-quality water type (often brackish-saline). A shallow...

ASR-Coastal

ASR-Coastal uses multiple partially penetrating wells in a single borehole (MPPWs) to optimize the infiltration, storage and recovery of freshwater...

ASRO

Aquifer storage and recovery using multiple partially penetrating wells (MPPWs) in combination with reverse osmosis. During the injection phase, R...

Artificial recharge in coastal sand dunes

Urban Waterbuffer

Seepage Catcher (Seep-Cat)

Controlled Artificial Recharge and Drainage (CARD) System

- Click on “Read More” button.

subsol-data.eu/projects.net/d/Measure/cons/

SubSol SUB SOL Knowledge Environment

Home Marketplace Knowledge Base Toolbox Search

SWS solutions

A set of innovative, practical concepts for protection, enlargement and utilization of freshwater resources in coastal areas

Freshmaker

READ MORE

The Freshmaker is designed to enlarge, protect, and utilize freshwater lenses in brackish-saline aquifers using two horizontal wells. A deep horizon...

Freshkeeper

The Freshkeeper protects shallow abstraction wells in a freshwater layer underlain by a low-quality water type (often: brackish-saline). A shallow ...

ASR-Coastal

ASR-Coastal uses multiple partially penetrating wells in a single borehole (MPPWs) to optimize the infiltration, storage and recovery of freshwater...

ASRO

Aquifer storage and recovery using multiple partially penetrating wells (MPPWs) in combination with reverse osmosis. During the injection phase, f...

Artificial recharge in coastal sand dunes

Urban Waterbuffer

Seepage Catcher (SeepCat)

Controlled Artificial Recharge and Drainage (CARD) System

subsol-data.eu/projects.net/d/Measure/3

- View full information available for this item.(In this use case “Freshmaker.”)

subsol-data.eu/projects.net/d/Measure/3

SubSol SUB SOL Knowledge Environment

Home Marketplace Knowledge Base Toolbox Search

SWS solution: Freshmaker

Winter period: surplus of freshwater

Injection

300 mg Cl/L

1000 mg Cl/L

3000 mg Cl/L

10000 mg Cl/L

Injection of freshwater

abstraction of brackish water

sand layer

clay layer

Source: <https://www.kwwater.nl/en/projecten/salisation-and-freshwater-ovezande/>

Description

The **Freshmaker** is designed to enlarge, protect, and utilize freshwater lenses in brackish-saline aquifers using two horizontal wells. A deep horizontal well is used for abstraction (or: interception) of brackish water, the shallow horizontal well is used for infiltration and recovery of freshwater. The technique was initiated by the recent development of horizontal directional drilled wells (HDDWs).

Water use - End users

- Drinking water
- Irrigation water

Reference applications

- Freshmaker in Ovezande (Netherlands)
- ASR-Coastal and Freshmaker in Schinias (Greece)

Title

Freshmaker

Synonyms

ASR, Zoetmaker

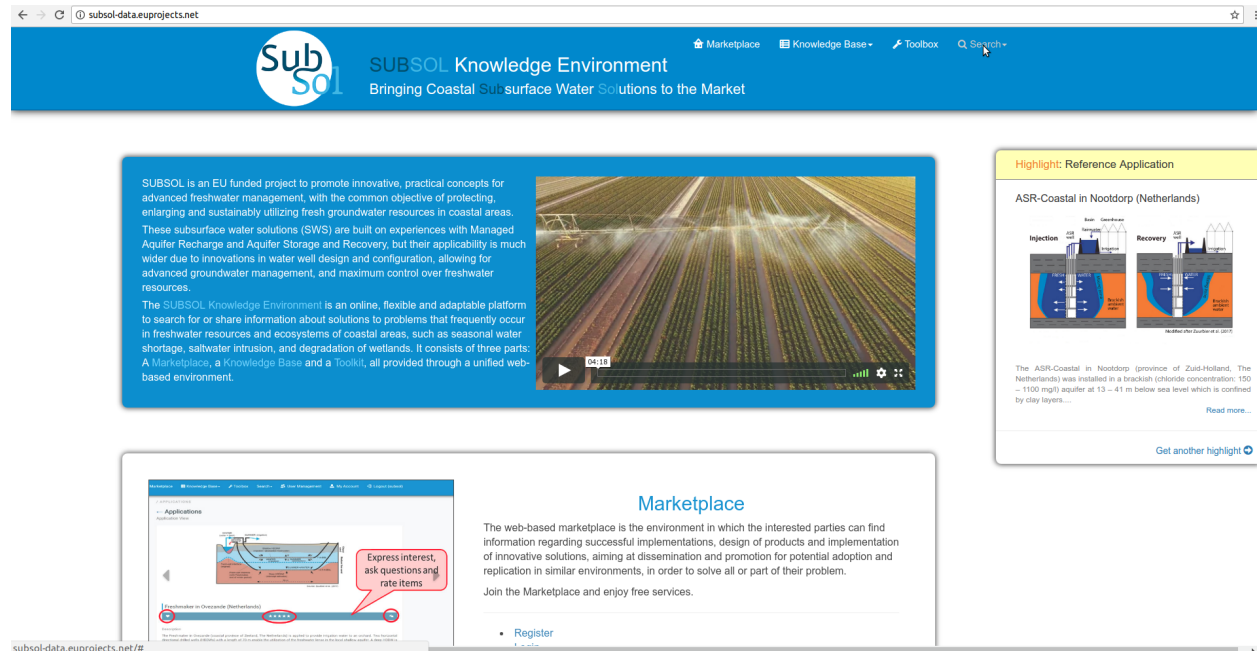
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2018-06-19 07:20:02+00:00

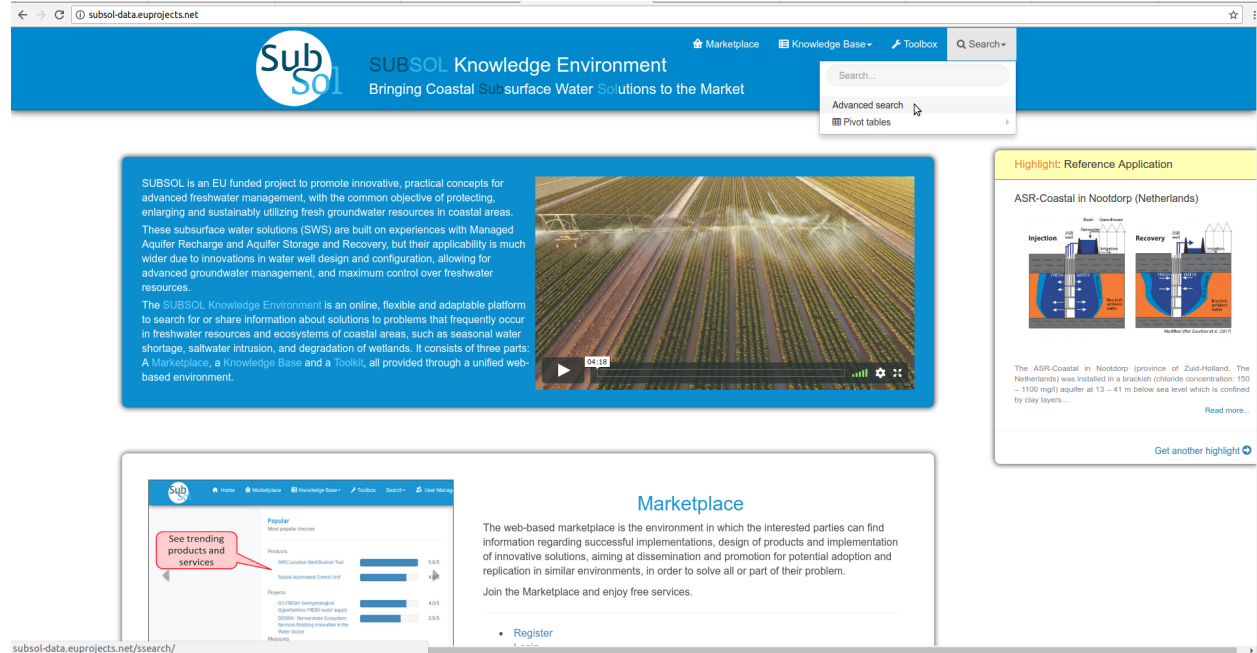
2. Search

2.1 Advanced search

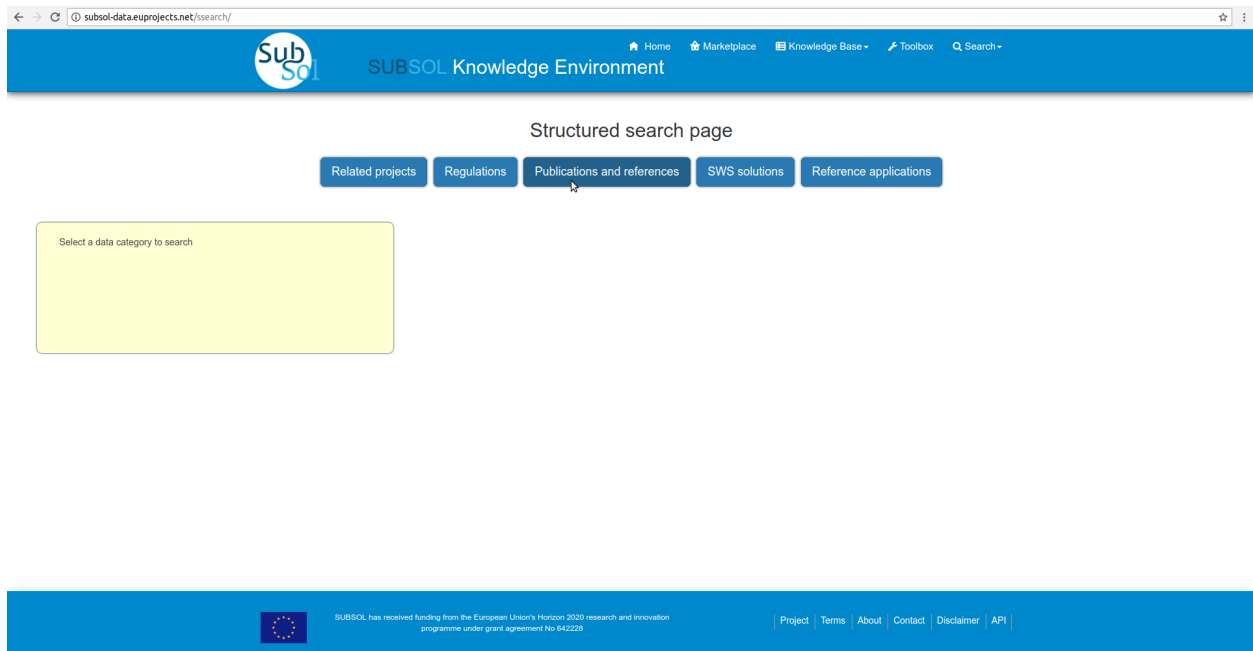
- Click on “Search” button.



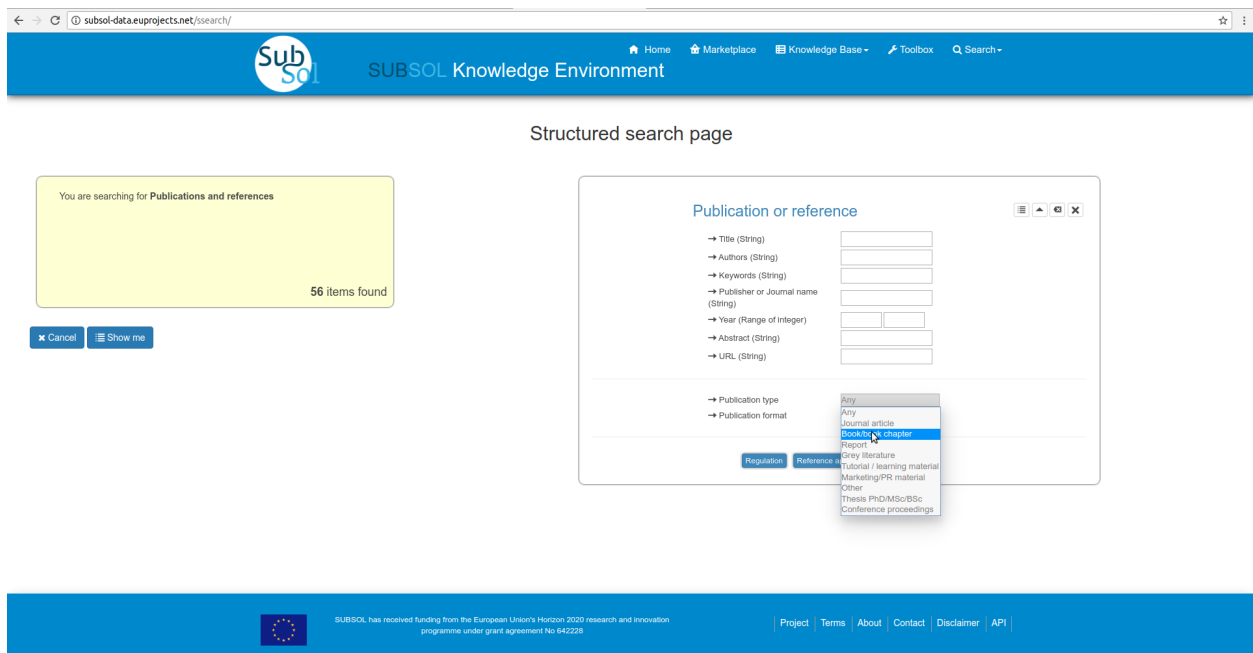
- Select the “Advanced Search” option from dropdown list.



- Select a data category to search.



- Provide Search criteria.



- Select an item from the search results.

← → ↻ subsol-data.euprojects.net/ij/Publication/?filter=publicationtype_pk_exact=%271%27 ☆

SubSol SUB SOL Knowledge Environment Home Marketplace Knowledge Base Toolbox Search

Publications and references

Publications, references and other sources related to the protection, enlargement and utilization of freshwater resources in coastal areas

Show 10 entries Search:

Title	Authors	Publisher or Journal name	Year	Abstract
A post audit and inverse modeling in reactive transport: 50years of artificial recharge in the Amsterdam Water Supply Dunes	RH Karlzen, FJC Smits, PJ Stuytland, TN Oltshoom, BM van Breukelen	Journal of Hydrology 454-455: 7-25	2012	This article describes the post audit and inverse modeling of a 1-D forward reactive transport model. The model simulates the ...
Analysis of the thickness of a fresh water lens and of the transition zone between this lens and upwelling saline ...	S Eenhan, A Leijnse, PAC Raats, SEATM van der Zee	Advances in Water Resources 34: 291-302	2011	In regions with saline groundwater, fresh water lenses may develop due to rainwater infiltration. The amount of fresh water that ...
Assessing impacts of climate change, sea level rise, and drainage canals on saltwater intrusion to coastal aquifer	P. Rasmussen, T. O. Sonnenborg, G. Gorcear, K. Hinsby	Hydrology and Earth System Sciences 17: 421-443	2013	Groundwater abstraction from coastal aquifers is vulnerable to climate change and sea level rise because both may potentially impact saltwater ...
Assessment of Aquifer Storage and Recovery (ASR) feasibility at selected sites in the Emirate of Abu Dhabi, UAE	S Sathiah, MM Mohamed	Environmental Earth Sciences 77: 112	2018	Aquifer storage and recovery (ASR) is considered as a strategy for the storage of water to ensure a sustainable water
Benefits and hurdles of using brackish groundwater as a drinking water source in the Netherlands	Pieter J. Stuytland, Klaasjan J. Raai	Hydrogeology Journal 18(1): 117-130	2010	The production of fresh drinking water from brackish groundwater by reverse osmosis (BWRO) is becoming more attractive, even in temperate ...
Consequences and mitigation of saltwater intrusion Induced by short-circuiting during aquifer storage and recovery in a coastal subsurface	Koen G. Zuurbier, Pieter J. Stuytland	Hydrology and Earth System Sciences 21: 1173-1188	2017	Coastal aquifers and the deeper subsurface are increasingly exploited. The accompanying perforation of the subsurface for those purposes has increased ...
Desalination of brackish groundwater and concentrate disposal by deep well injection	Nico Wolthek, Klaasjan J. Raai, Jan A. de Ruijter, Antoine Kemperman, Ale T. Oosterhof	Desalination and Water Treatment 51(4): 1131-1136	2013	In the province of Friesland (in the Northern part of The Netherlands), problems have arisen with the abstraction of fresh ...
Dutch Freshkeeper broadly applicable	Klaasjan J. Raai, Ale T. Oosterhof, Frans Heijls, Petra Ross	H2O Water Matters 1: 35-37	2015	In the past decade several concepts to manage fresh and salt (brackish) groundwater more effectively and so improve the fresh ...
Effects of intake interruptions on dune infiltration systems in the Netherlands, their quantification and mitigation	Pieter J. Stuytland, Martin L. van der Schans	Science of the Total Environment 630: 737-773	2018	In the coastal dunes of the Western Netherlands, managed aquifer recharge (MAR) is applied for drinking water supply since 1957 ...
Enabling successful aquifer storage and recovery of freshwater using horizontal directional drilled wells in coastal aquifers	Koen G. Zuurbier, Jan W. Koolman, Michel M.A. Groen, Bas Maas, Pieter J. Stuytland	Journal of Hydrologic Engineering 20(3)	2015	Aquifer storage and recovery (ASR) of freshwater surpluses can reduce freshwater shortages in coastal areas during periods of prolonged droughts. ...

Page 1 of 10 of 28 pages

- View full information available for this item.

← → ↻ subsol-data.euprojects.net/ij/Publication/38 ☆

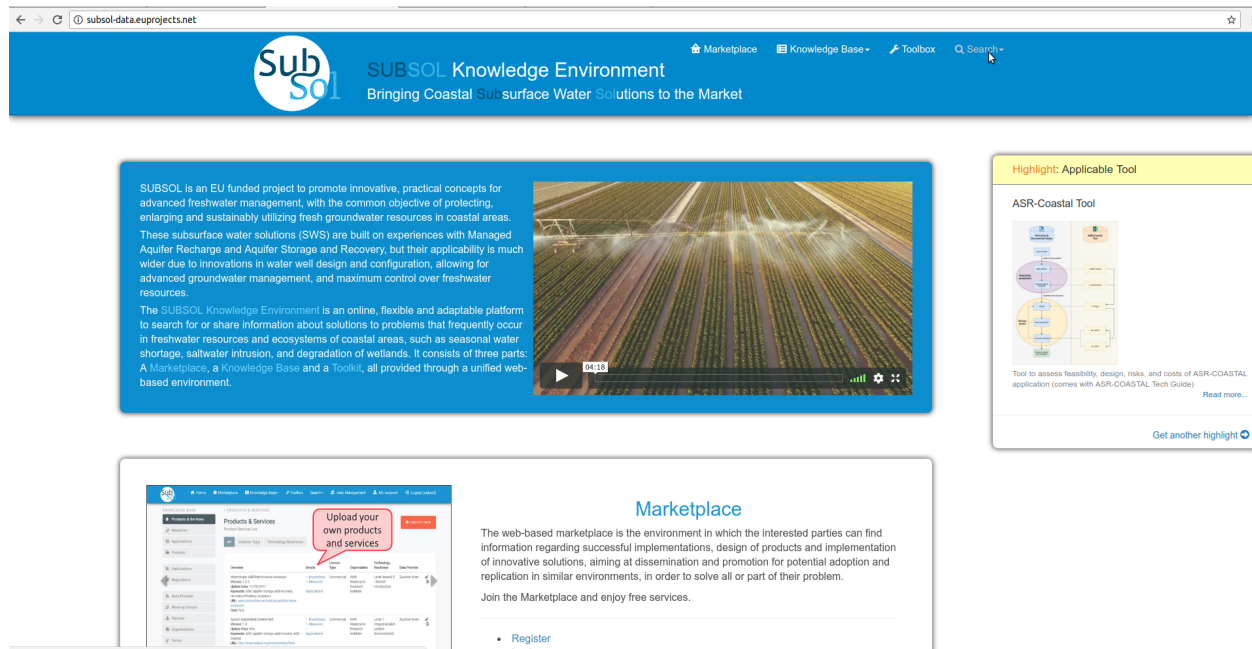
SubSol SUB SOL Knowledge Environment Home Marketplace Knowledge Base Toolbox Search

Publication or reference: A post audit and inverse modeling in reactive transport: 50years of artificial recharge in the Amsterdam Water Supply Dunes (Journal article)

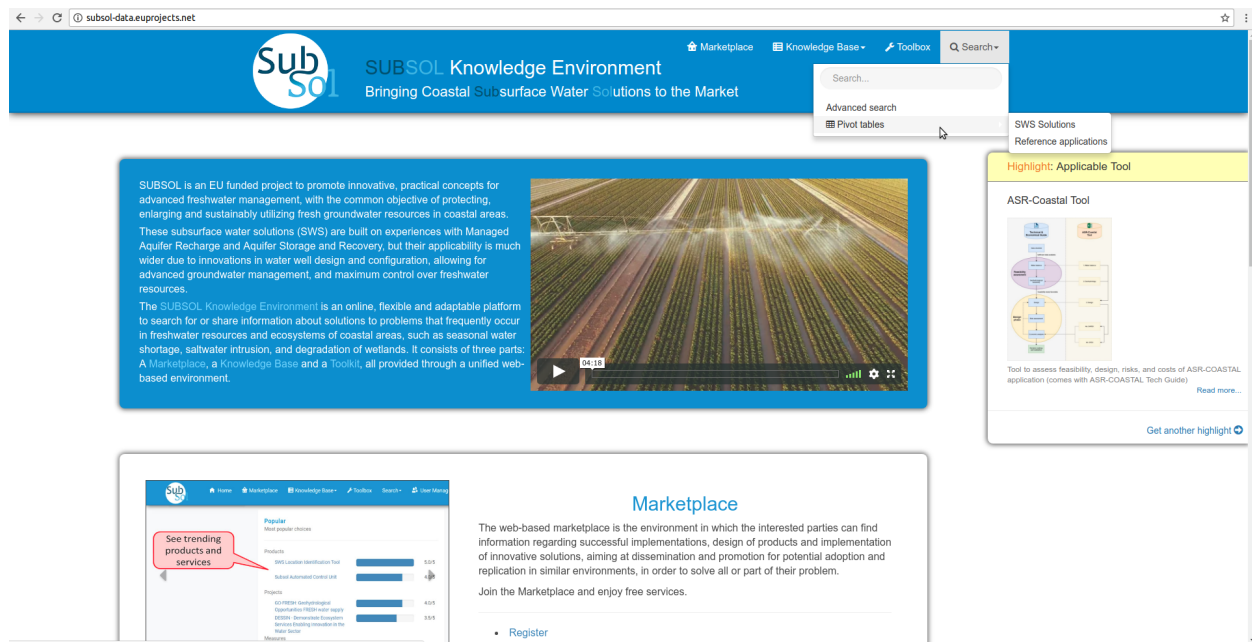
Keywords Reactive transport modeling • Artificial recharge • Groundwater • Cation exchange • Model calibration • Parameter estimation	Title A post audit and inverse modeling in reactive transport: 50years of artificial recharge in the Amsterdam Water Supply Dunes
Abstract This article describes the post audit and inverse modeling of a 1-D forward reactive transport model. The model simulates the changes in water quality following artificial recharge of pre-treated water from the river Rhine in the Amsterdam Water Supply Dunes using the PHREEQC-2 numerical code. One observation dataset is used for model calibration, and another dataset for validation of model predictions. The total simulation time of the model is 50 years, from 1957 to 2007, with recharge composition varying on a monthly basis and the post audit is performed 26 years after the former model simulation period. The post audit revealed that the original model could reasonably predict conservative transport and kinetic redox reactions (oxygen and nitrate reduction coupled to the oxidation of soil organic carbon), but showed discrepancies in the simulation of cation exchange. Conceptualizations of the former model were inadequate to accurately simulate water quality changes controlled by cation exchange, especially concerning the breakthrough of potassium and magnesium fronts. Changes in conceptualization and model design, including the addition of five flow paths, to a total of six, and the use of parameter estimation software (PEST), resulted in a better model to measurement fit and system representation. No unique parameter set could be found for the model, primarily due to high parameter correlations, and an assessment of the predictive error was made using a calibration constrained Monte-Carlo method, and evaluated against field observations. The predictive error was found to be low for Na ⁺ and Ca ²⁺ , except for greater travel times, while the K ⁺ and Mg ²⁺ error was restricted to the exchange fronts at some of the flow paths. Optimized cation exchange coefficients were relatively high, especially for potassium, but still within the observed range in literature. The exchange coefficient for potassium agrees with strong fixation on little, a main clay mineral in the area. Optimized CEC values were systematically lower than clay and organic matter contents indicated, possibly reflecting preferential flow of groundwater through the more permeable but less reactive aquifer parts. Whereas the artificial recharge initially acted as an intrusion of relatively saline water triggering Na ⁺ for Ca ²⁺ exchange, further increasing total hardness of the recharged water, the gradual long-term reduction in salinity of the river Rhine since the mid 1970s has shifted to an intrusion of fresher water causing Ca ²⁺ for Na ⁺ exchange. As a result, seasonal and longer term reversal of the initial cation exchange processes was observed adding to the general long-term reduction in total hardness of the recharged Rhine water.	Authors RH Karlzen, FJC Smits, PJ Stuytland, TN Oltshoom, BM van Breukelen
URL https://doi.org/10.1016/j.jhydrol.2012.05.019	Publisher or Journal name Journal of Hydrology 454-455: 7-25
Reference application • The Amsterdam Water Supply Dunes (AMWSD) - 1. Northside recharge	Year 2012

3. Pivot Tables

- Click on “Search” button.



- Click on “Pivot Tables”.



- Select the preferred category from the dropdown list. (In this use case “SWS SOLUTIONS”).

SUBSOL Knowledge Environment
Bringing Coastal Subsurface Water Solutions to the Market

SUBSOL is an EU funded project to promote innovative, practical concepts for advanced freshwater management, with the common objective of protecting, enlarging and sustainably utilizing fresh groundwater resources in coastal areas. These subsurface water solutions (SWS) are built on experiences with Managed Aquifer Recharge and Aquifer Storage and Recovery, but their applicability is much wider due to innovations in water well design and configuration, allowing for advanced groundwater management, and maximum control over freshwater resources.

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• [Register](#)

Highlight: Applicable Tool

ASR-Coastal Tool

Tool to assess feasibility, design, risks, and costs of ASR-COASTAL application (comes with ASR-COASTAL Tech Guide) [Read more...](#)

[Get another highlight](#)

- Select the preferred parameters from dropdown lists.

Pivot Table of SWS solutions

How to use: (1) Select the parameters from the drop-down menus. (2) The table is filled-in with the numbers of SWS solution elements that match the parameter values. (3) Click on the numbers in the cells to list the resulting SWS solutions.

Objectives	Drinking water	Irrigation water	Process water (industry)	Water reuse	(Urban) water management	Ecosystem service
Well type						
Objectives	1	2				
Method cost						
building_blocks						
Water use - End users	1	1				
Improve (production) water quality		1				
Increase (seasonal) freshwater availability	2	2		1		1
Urban water management						
Mitigate groundwater overexploitation	2	2		1		1
Strategic freshwater reserves	1	2				
Ecosystem service	1			1		1

Scope: 1

SUBSOL has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 842223

[Project](#) | [Terms](#) | [About](#) | [Contact](#) | [Disclaimer](#) | [API](#)

subsol-data.euprojects.net/p/Measure/1/?model1=final_uses&model2=objectives#

← → subsof-data.eu/projects.net/p/Measure/1/?model1=final_uses&model2=final_uses

SubSol SUBSOL Knowledge Environment

Home Marketplace Knowledge Base Toolbox Search Help

How to use: (1) Select the parameters from the drop-down menus. (2) The table is filled-in with the numbers of SWS solution elements that match the parameter values. (3) Click on the numbers in the cells to list the resulting SWS solutions.

Pivot Table of SWS solutions

Water use - End users

	Drinking water	Irrigation water	Process water (industry)	Water reuse	(Urban) water management	Ecosystem service
Drinking water	6					
Irrigation water		6				
Process water (industry)						
Water reuse				1		
(Urban) water management						
Ecosystem service						1

Scope: 1

Water use - End users

Well type
Objectives
Method cost
building blocks
Water use - End users

SUBSOL has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 642229

Project Terms About Contact Disclaimer API

subsof-data.eu/projects.net/p/Measure/1/?model1=final_uses&model2=final_uses#

- Click on preferred results.

← → subsof-data.eu/projects.net/p/Measure/1/?model1=measurecosts&model2=final_uses

SubSol SUBSOL Knowledge Environment

Home Marketplace Knowledge Base Toolbox Search Help

How to use: (1) Select the parameters from the drop-down menus. (2) The table is filled-in with the numbers of SWS solution elements that match the parameter values. (3) Click on the numbers in the cells to list the resulting SWS solutions.

Pivot Table of SWS solutions

Water use - End users

	< 1,000 euros	1,000 - 10,000 euros	10,000 - 100,000 euros	100,000 - 1,000,000 euros	> 1,000,000 euros
Drinking water			4	3	2
Irrigation water			6	4	3
Process water (industry)					
Water reuse					
(Urban) water management					
Ecosystem service					

Scope: 1

Method cost

SUBSOL has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 642229

Project Terms About Contact Disclaimer API

subsof-data.eu/projects.net/p/Measure/1/?filter=measurecosts=3&final_uses=1

- Click on relevant item and view details.

The screenshot shows the SUBSOL Knowledge Environment website. The header includes the SUBSOL logo and navigation links: Home, Marketplace, Knowledge Base, Toolbox, and Search. The main content area is titled "SWS solutions" and describes a set of innovative, practical concepts for protection, enlargement and utilization of freshwater resources in coastal areas. Below this, there is a table with 4 entries. The table has columns for Title and Description. The entries are: ASR-Coastal, Freshkeeper, Freshmaker, and Seepage Catcher (SeepCat). A search bar is located to the right of the table. The footer contains the European Union flag, a statement about funding from the European Union's Horizon 2020 research and innovation programme, and links to Project, Terms, About, Contact, Disclaimer, and API.

Title	Description
ASR-Coastal	ASR-Coastal uses multiple partially penetrating wells in a single borehole (MPPW) to optimize the infiltration, storage and recovery of freshwater ...
Freshkeeper	The Freshkeeper protects shallow abstraction wells in a freshwater layer underlain by a low-quality water type (often: brackish-saline). A shallow ...
Freshmaker	The Freshmaker is designed to enlarge, protect, and utilize freshwater lenses in brackish-saline aquifers using two horizontal wells. A deep ...
Seepage Catcher (SeepCat)	SeepCat is a saline groundwater discharge system which protects limited freshwater resources on small islands against salinization and sea level ...

4.2 Private Services

1.Categories

- Initially the user must login with private account privileges.

The screenshot shows the SUBSOL Knowledge Environment website with a focus on private services. The header is the same as the previous screenshot. The main content area is divided into three sections. The first section, titled "SUBSOL is an EU funded project...", describes the project's goals and the SUBSOL Knowledge Environment platform. The second section, titled "Marketplace", describes the web-based marketplace where interested parties can find information regarding successful implementations, design of products and implementation of innovative solutions. The third section, titled "Highlight: Reference Application", features a video player showing a field with a well and a diagram of the Freshkeeper system. The diagram shows a well with a pump that extracts fresh water from the aquifer and brackish water from the surface. The fresh water is used for drinking, and the brackish water is used for irrigation. A "Read more..." link is provided below the diagram. A "Get another highlight" link is also present.

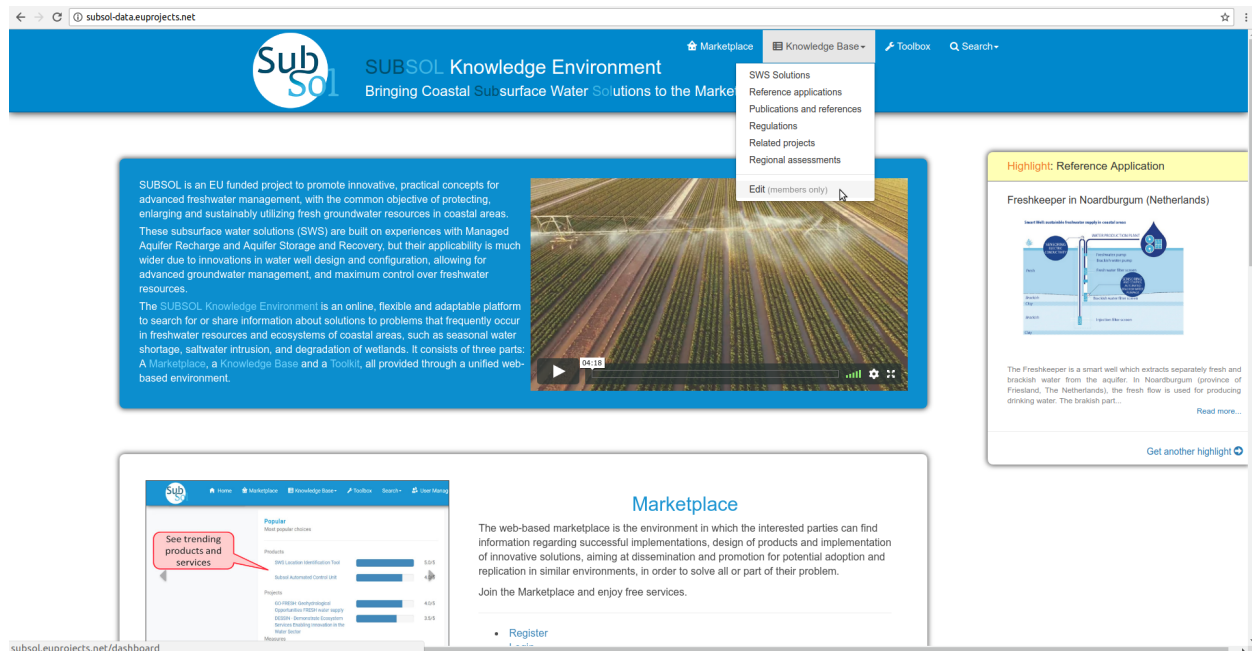
Marketplace

The web-based marketplace is the environment in which the interested parties can find information regarding successful implementations, design of products and implementation of innovative solutions, aiming at dissemination and promotion for potential adoption and replication in similar environments, in order to solve all or part of their problem.

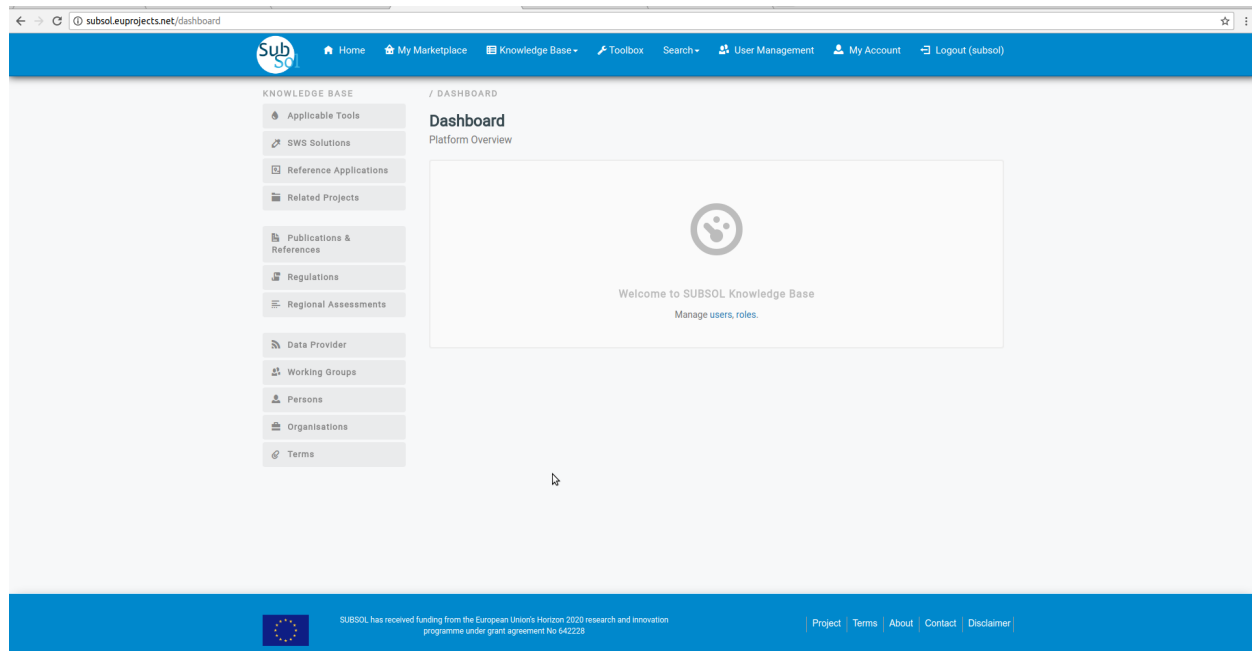
Join the Marketplace and enjoy free services.

- Register

- Click on "Edit".

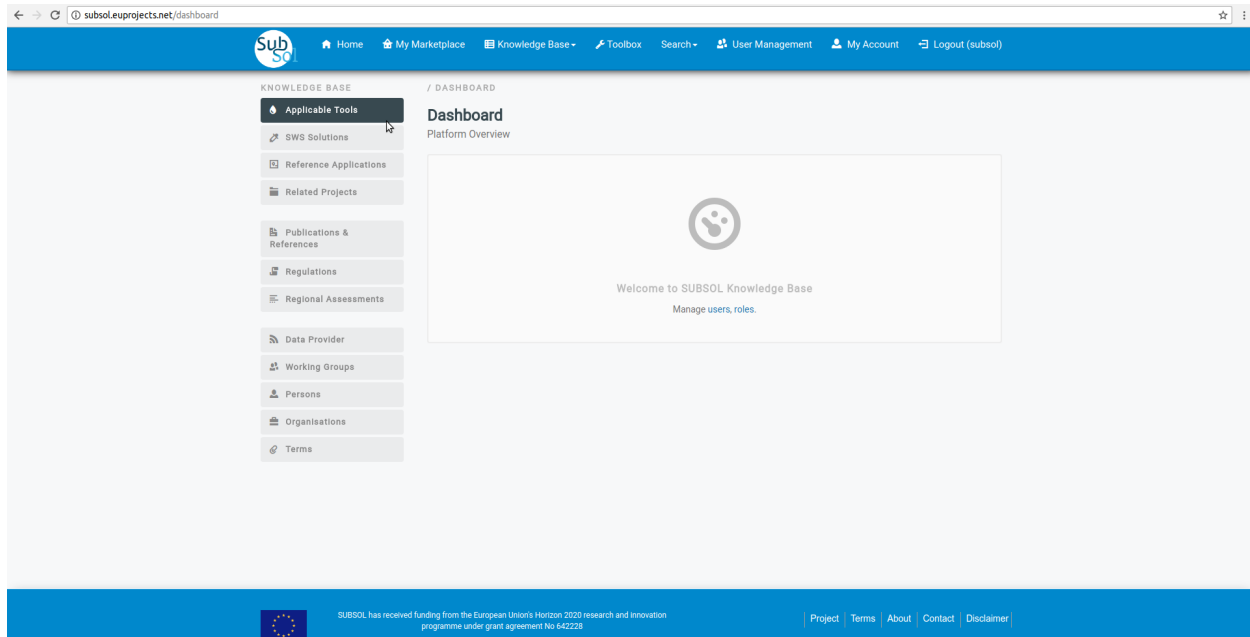


- The desired Knowledge base category are at left menu.

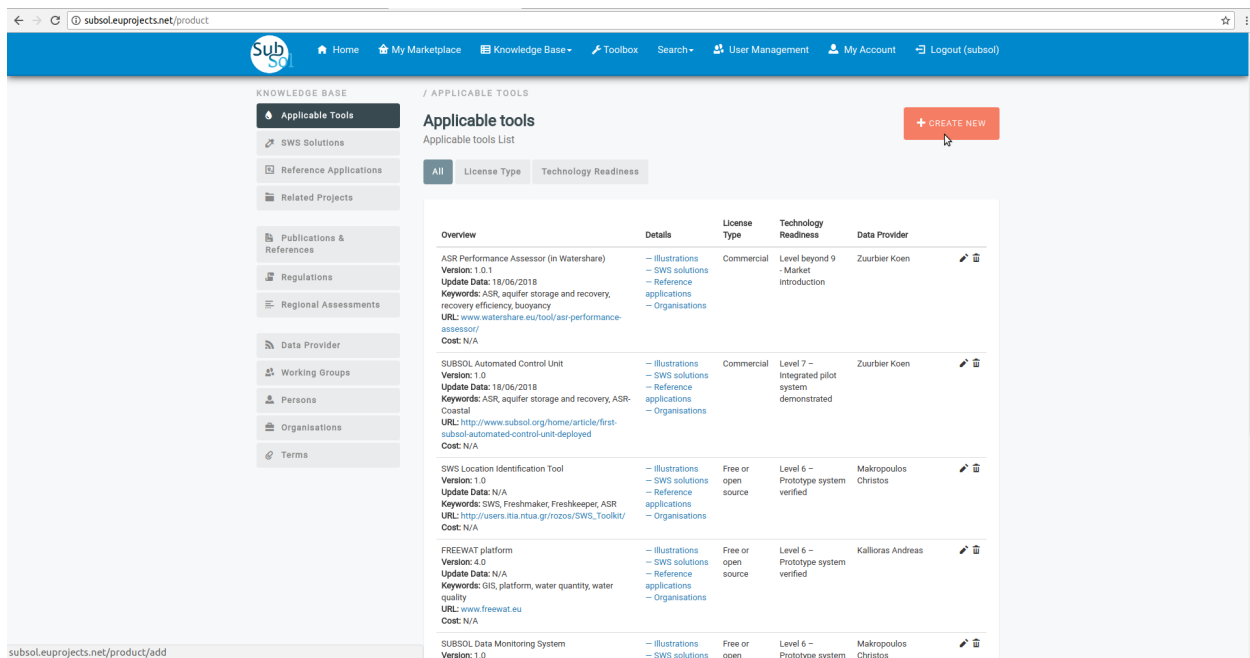


Add Content

- Click on desired menu-item (in this case Application Tools).



- Click on “CREATE NEW” button.



- Provide your info and click on “Save” button.

← → Not secure | subsol.euprojects.net/product/add

SubSol Home My Marketplace Knowledge Base+ Toolbox Search+ User Management My Account Logout (subsol)

Regulations
Regional Assessments
Data Provider
Working Groups
Persons
Organisations
Terms

Description *

This is a test

Keywords

ts

URL

http://www.example.com

Version

1.0

Costs

Costs

Update Date

28/08/2018

Select License Type

Free or open source

Select Technology Readiness

Level 1 - Basic Research: basic principles are observed and reported

Select Data Provider

- Select -

Save

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Project Terms About Contact Disclaimer

- A pop-up message confirms that you have successfully create your new entry.

← → Not secure | subsol.euprojects.net/product

SubSol Home My Marketplace Knowledge Base+ Toolbox Search+ User Management My Account Logout (subsol)

Regulations
Regional Assessments
Data Provider
Working Groups
Persons
Organisations
Terms

ASR Performance Assessor (in Watershare)	Version: 1.0.1 Update Date: 18/06/2018 Keywords: ASR, aquifer storage and recovery, recovery efficiency, buoyancy URL: www.watershare.eu/tool/asr-performance-assessor/ Cost: N/A	Illustrations SWS solutions Reference applications Organisations	Commercial	Level beyond 9 - Market introduction	Zuurbier Koen	
SUBSOL Automated Control Unit	Version: 1.0 Update Date: 18/06/2018 Keywords: ASR, aquifer storage and recovery, ASR Coastal URL: http://www.subsol.org/home/article/first-subsol-automated-control-unit-deployed Cost: N/A	Illustrations SWS solutions Reference applications Organisations	Commercial	Level 7 - Integrated pilot system demonstrated	Zuurbier Koen	
SWS Location Identification Tool	Version: 1.0 Update Date: N/A Keywords: SWS, Freshmaker, Freshkeeper, ASR URL: http://users.itia.ntua.gr/rozos/SWS_Toolkit/ Cost: N/A	Illustrations SWS solutions Reference applications Organisations	Free or open source	Level 6 - Prototype system verified	Makropoulos Christos	
FREEWAT platform	Version: 4.0 Update Date: N/A Keywords: GIS, platform, water quantity, water quality URL: www.freewat.eu Cost: N/A	Illustrations SWS solutions Reference applications Organisations	Free or open source	Level 6 - Prototype system verified	Kallioras Andreas	
SUBSOL Data Monitoring System	Version: 1.0 Update Date: 29/08/2017 Keywords: Platform, measurements visualisation, customised features, generic URL: http://83.212.168.149:8100/fusion/account/login/?next=/fusion/ Cost: N/A	Illustrations SWS solutions Reference applications Organisations	Free or open source	Level 6 - Prototype system verified	Makropoulos Christos	
ASR Coastal Tool	Version: 1.0 Update Date: N/A Keywords: N/A URL: www.subsol.org Cost: N/A	Illustrations SWS solutions Reference applications Organisations	Free or open source	Level 8 - System incorporated in commercial design	Zuurbier Koen	

Entity has been created.
View Activity

Modify Content

- Click on “Modify” pencil-item.

The screenshot shows the 'Applicable tools' page in the SubSol Knowledge Base. The page has a blue header with navigation links: Home, My Marketplace, Knowledge Base, Toolbox, Search, User Management, My Account, and Logout (subsol). A left sidebar contains a 'KNOWLEDGE BASE' menu with options like Applicable Tools, SWS Solutions, Reference Applications, Related Projects, Publications & References, Regulations, Regional Assessments, Data Provider, Working Groups, Persons, Organisations, and Terms. The main content area is titled 'Applicable tools' and 'Applicable tools List'. It features a table with the following columns: Overview, Details, License Type, Technology Readiness, and Data Provider. The table lists five tools:

Overview	Details	License Type	Technology Readiness	Data Provider
ASR Performance Assessor (in Watershare) Version: 1.0.1 Update Data: 18/06/2018 Keywords: ASR, aquifer storage and recovery, recovery efficiency, buoyancy URL: www.watershare.eu/tool/asr-performance-assessor/ Cost: N/A	– Illustrations – SWS solutions – Reference applications – Organisations	Commercial	Level beyond 9 - Market introduction	Zuurbier Koen
SUBSOL Automated Control Unit Version: 1.0 Update Data: 18/06/2018 Keywords: ASR, aquifer storage and recovery, ASR-Costal URL: http://www.subsol.org/home/article/first-subsol-automated-control-unit-deployed Cost: N/A	– Illustrations – SWS solutions – Reference applications – Organisations	Commercial	Level 7 – Integrated pilot system demonstrated	Zuurbier Koen
SWS Location Identification Tool Version: 1.0 Update Data: N/A Keywords: SWS, Freshmaker, Freshkeeper, ASR URL: http://users.ntua.gr/rozos/SWS_Toolkit/ Cost: N/A	– Illustrations – SWS solutions – Reference applications – Organisations	Free or open source	Level 6 – Prototype system verified	Makropoulos Christos
FREEWAT platform Version: 4.0 Update Data: N/A Keywords: GIS, platform, water quantity, water quality URL: www.freewat.eu Cost: N/A	– Illustrations – SWS solutions – Reference applications – Organisations	Free or open source	Level 6 – Prototype system verified	Kallioras Andreas
SUBSOL Data Monitoring System Version: 1.0	– Illustrations – SWS solutions	Free or open	Level 6 – Prototype system	Makropoulos Christos

- Provide your changes and click on “Save” button.

The screenshot shows the 'Applicable tools' form in the SubSol Knowledge Base. The form has a blue header with navigation links: Home, My Marketplace, Knowledge Base, Toolbox, Search, User Management, My Account, and Logout (subsol). A left sidebar contains a 'KNOWLEDGE BASE' menu with options like Regulations, Regional Assessments, Data Provider, Working Groups, Persons, Organisations, and Terms. The main content area is titled 'Description *' and contains the following fields:

- Description: The ASR Performance Assessor attempts to evaluate the potential recovery efficiency during ASR in brackish-saline aquifers as well as
- Keywords: ASR, aquifer storage and recovery, recovery efficiency, buoyancy
- URL: www.watershare.eu/tool/asr-performance-assessor/
- Version: 1.0.1
- Costs: Costs
- Update Data: 18/06/2018
- Select License Type: Commercial
- Select Technology Readiness: Level beyond 9 - Market introduction
- Select Data Provider: Zuurbier Koen

A 'Save' button is located at the bottom of the form.

- A pop-up message confirms that you have successfully create your new entry.

The screenshot shows the 'Applicable Tools' page in the SubSol Knowledge Base. The page has a blue header with navigation links: Home, My Marketplace, Knowledge Base, Toolbox, Search, User Management, My Account, and Logout (subsol). The left sidebar contains a 'KNOWLEDGE BASE' menu with options: Applicable Tools (selected), SWS Solutions, Reference Applications, Related Projects, Publications & References, Regulations, Regional Assessments, Data Provider, Working Groups, Persons, Organisations, and Terms. The main content area is titled 'Applicable tools' and 'Applicable tools List'. It features a tabbed interface with 'All', 'License Type', and 'Technology Readiness' tabs. A red '+ CREATE NEW' button is in the top right. The table below lists several tools:

Overview	Details	License Type	Technology Readiness	Data Provider
ASR Performance Assessor (in Watershare) Version: 1.0.1 Update Data: 18/06/2018 Keywords: ASR, aquifer storage and recovery, recovery efficiency, buoyancy URL: www.watershare.eu/tool/asr-performance-assessor/ Cost: N/A	-- Illustrations -- SWS solutions -- Reference applications -- Organisations	Commercial	Level beyond 9 - Market introduction	Zuurbier Koen
SUBSOL Automated Control Unit Version: 1.0 Update Data: 18/06/2018 Keywords: ASR, aquifer storage and recovery, ASR-Coastal URL: http://www.subsol.org/home/article/first-subsol-automated-control-unit-deployed Cost: N/A	-- Illustrations -- SWS solutions -- Reference applications -- Organisations	Commercial	Level 7 - Integrated pilot system demonstrated	Zuurbier Koen
SWS Location Identification Tool Version: 1.0 Update Data: N/A Keywords: SWS, Freshmaker, Freshkeeper, ASR URL: http://users.lia.ntua.gr/rozon/SWS_Toolkit/ Cost: N/A	-- Illustrations -- SWS solutions -- Reference applications -- Organisations	Free or open source	Level 6 - Prototype system verified	Makropoulos Christos
FREEWAT platform Version: 4.0 Update Data: N/A Keywords: GIS, platform, water quantity, water quality URL: www.freewat.eu Cost: N/A	-- Illustrations -- SWS solutions -- Reference applications -- Organisations	Free or open source	Level 6 - Prototype system verified	Kallioras Andreas
SUBSOL Data Monitoring System Version: 1.0	-- Illustrations -- SWS solutions	Free or open	Level 6 - Prototype system	Makropoulos Christos

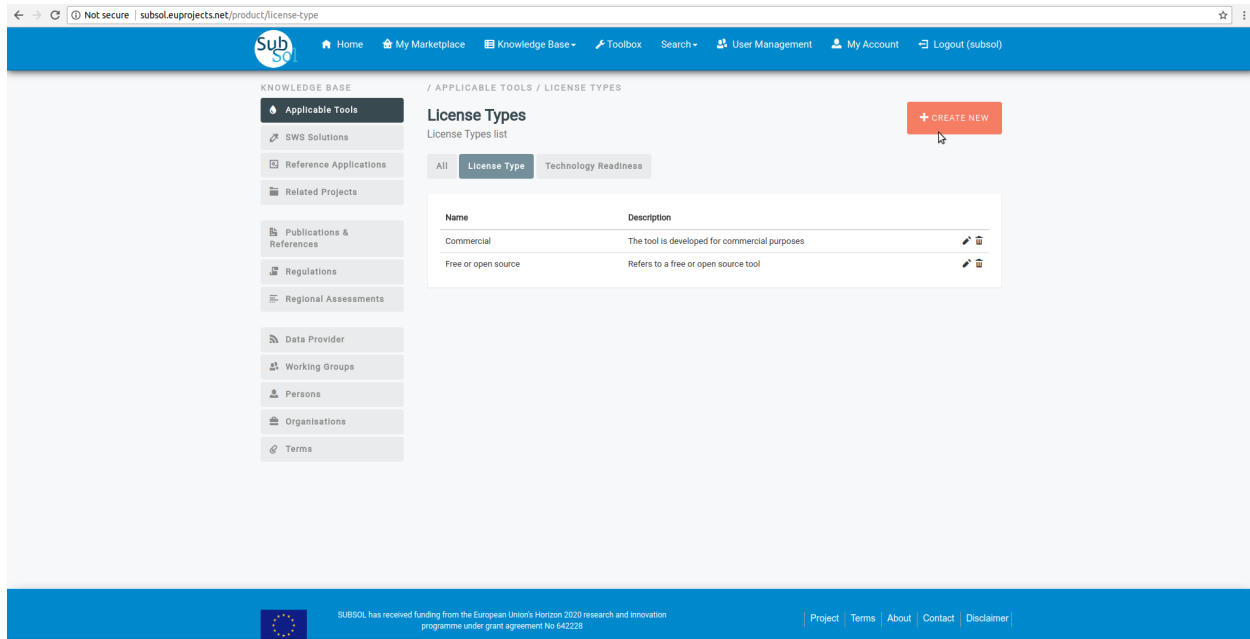
2.Applicable Tools

2.1. Licence Type

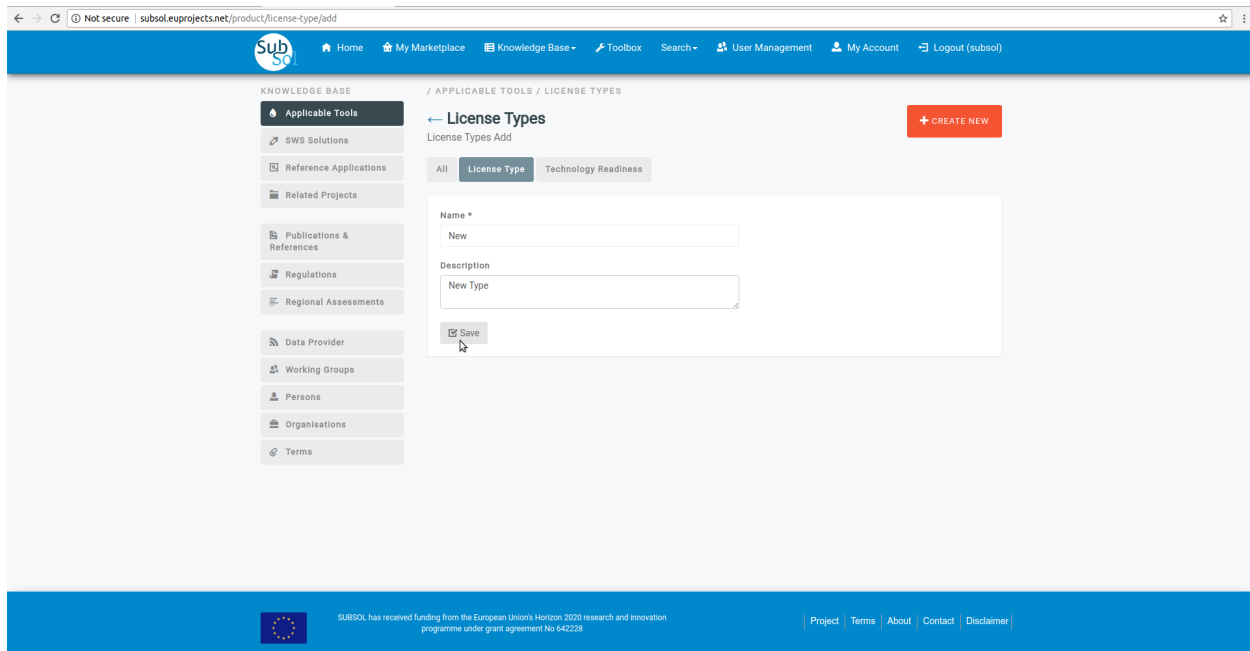
- Click on “Licence Type” menu-item

This screenshot is identical to the one above, showing the 'Applicable Tools' page in the SubSol Knowledge Base. It displays the same navigation menu, tabs, and table of tools. The red '+ CREATE NEW' button is clearly visible in the top right corner of the main content area.

- Click on “CREATE NEW” button.



- Provide licence type info and click on “Save” button.



- A pop-up message confirms that you have successfully create your new licence type.

SubSol Knowledge Base / APPLICABLE TOOLS / LICENSE TYPES

License Types

License Types list

[All](#) [License Type](#) [Technology Readiness](#)

Name	Description	
Commercial	The tool is developed for commercial purposes	
Free or open source	Refers to a free or open source tool	
New	New Type	

[+ CREATE NEW](#)

Entity has been created. [View Activity](#)

SUBSOL has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 642228

[Project](#) [Terms](#) [About](#) [Contact](#) [Disclaimer](#)

- Edit Licence Type
- Click on “Modify” pencil-item.

SubSol Knowledge Base / APPLICABLE TOOLS / LICENSE TYPES

License Types

License Types list

[All](#) [License Type](#) [Technology Readiness](#)

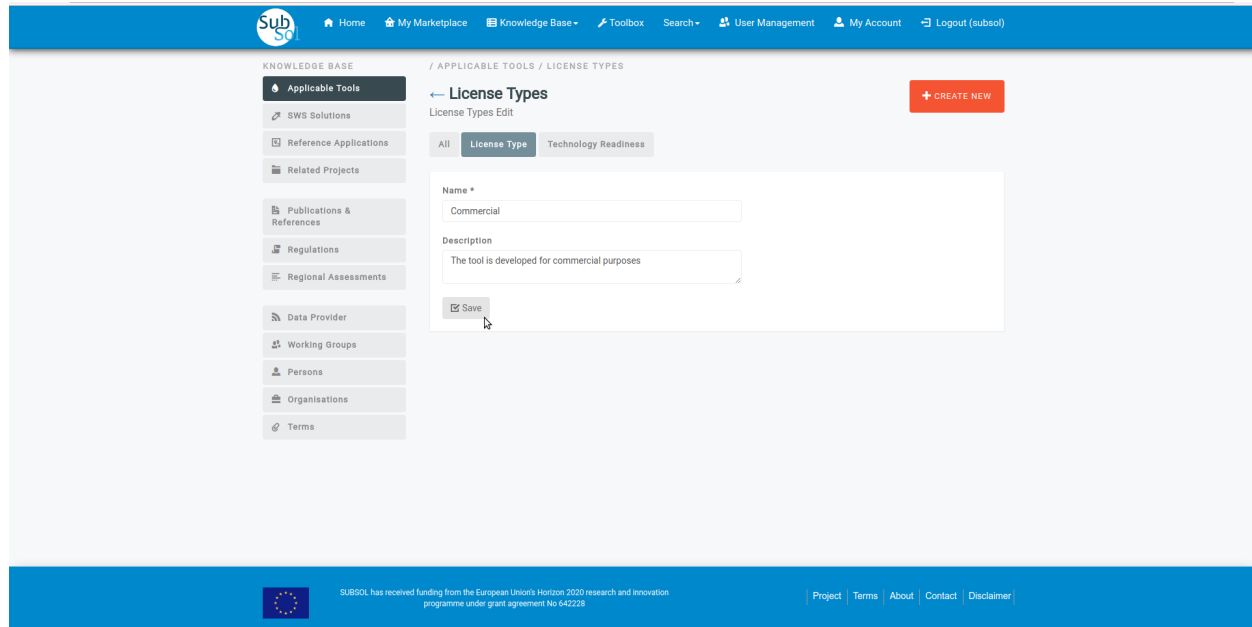
Name	Description	
Commercial	The tool is developed for commercial purposes	
Free or open source	Refers to a free or open source tool	

[+ CREATE NEW](#)

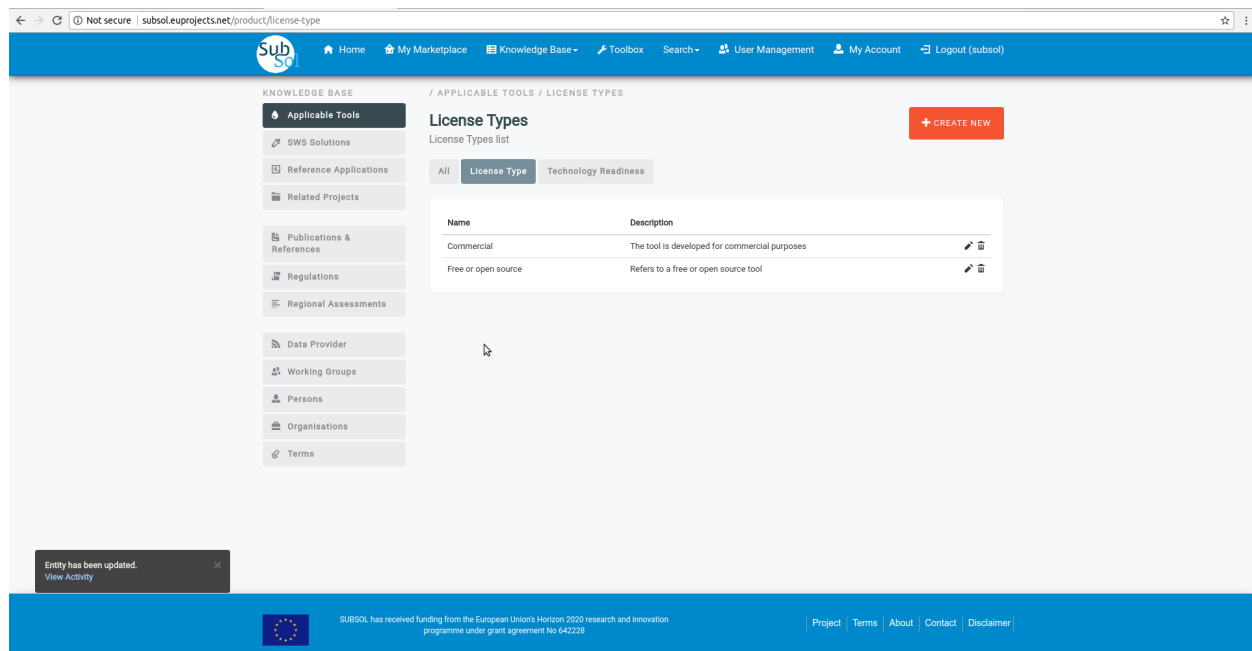
SUBSOL has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 642228

[Project](#) [Terms](#) [About](#) [Contact](#) [Disclaimer](#)

- Provide your changes and click on “Save” button.

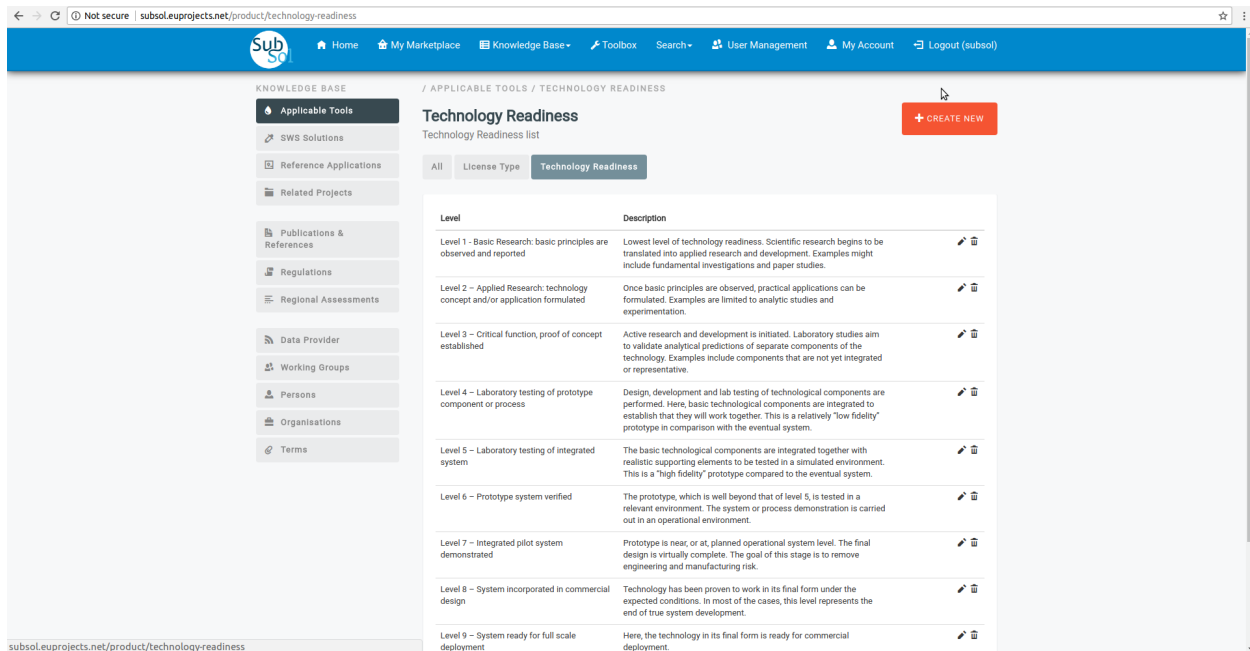


- A pop-up message confirms that you have successfully update your licence type.



2.2 Technology Readiness

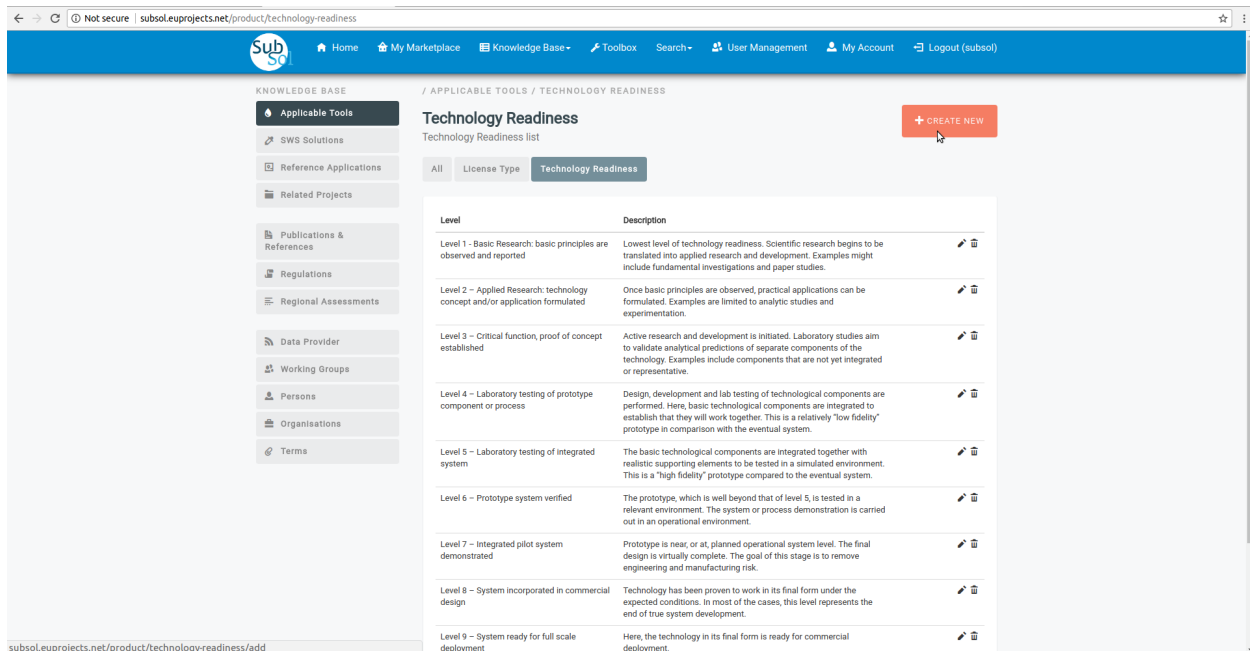
- Add Technology Readiness
- Click on “Technology Readiness” menu-item.



The screenshot shows the 'Technology Readiness' page on the SubSol platform. The page has a blue header with navigation links: Home, My Marketplace, Knowledge Base, Toolbox, Search, User Management, My Account, and Logout (subsol). The main content area is titled 'Technology Readiness' and includes a 'CREATE NEW' button. Below the title is a table with 9 levels of technology readiness, each with a description and a 'CREATE NEW' button.

Level	Description	
Level 1 - Basic Research: basic principles are observed and reported	Lowest level of technology readiness. Scientific research begins to be translated into applied research and development. Examples might include fundamental investigations and paper studies.	CREATE NEW
Level 2 - Applied Research: technology concept and/or application formulated	Once basic principles are observed, practical applications can be formulated. Examples are limited to analytic studies and experimentation.	CREATE NEW
Level 3 - Critical function, proof of concept established	Active research and development is initiated. Laboratory studies aim to validate analytical predictions of separate components of the technology. Examples include components that are not yet integrated or representative.	CREATE NEW
Level 4 - Laboratory testing of prototype component or process	Design, development and lab testing of technological components are performed. Here, basic technological components are integrated to establish that they will work together. This is a relatively "low fidelity" prototype in comparison with the eventual system.	CREATE NEW
Level 5 - Laboratory testing of integrated system	The basic technological components are integrated together with realistic supporting elements to be tested in a simulated environment. This is a "high fidelity" prototype compared to the eventual system.	CREATE NEW
Level 6 - Prototype system verified	The prototype, which is well beyond that of level 5, is tested in a relevant environment. The system or process demonstration is carried out in an operational environment.	CREATE NEW
Level 7 - Integrated pilot system demonstrated	Prototype is near, or at, planned operational system level. The final design is virtually complete. The goal of this stage is to remove engineering and manufacturing risk.	CREATE NEW
Level 8 - System incorporated in commercial design	Technology has been proven to work in its final form under the expected conditions. In most of the cases, this level represents the end of true system development.	CREATE NEW
Level 9 - System ready for full scale deployment	Here, the technology in its final form is ready for commercial deployment.	CREATE NEW

- Click on “Create New” button.



This screenshot is identical to the previous one, but the 'CREATE NEW' button is highlighted with a red border, indicating the next step in the process.

- Provide your credentials and click on “Save” button.

Read the Docs Template Documentation, Release 1.0

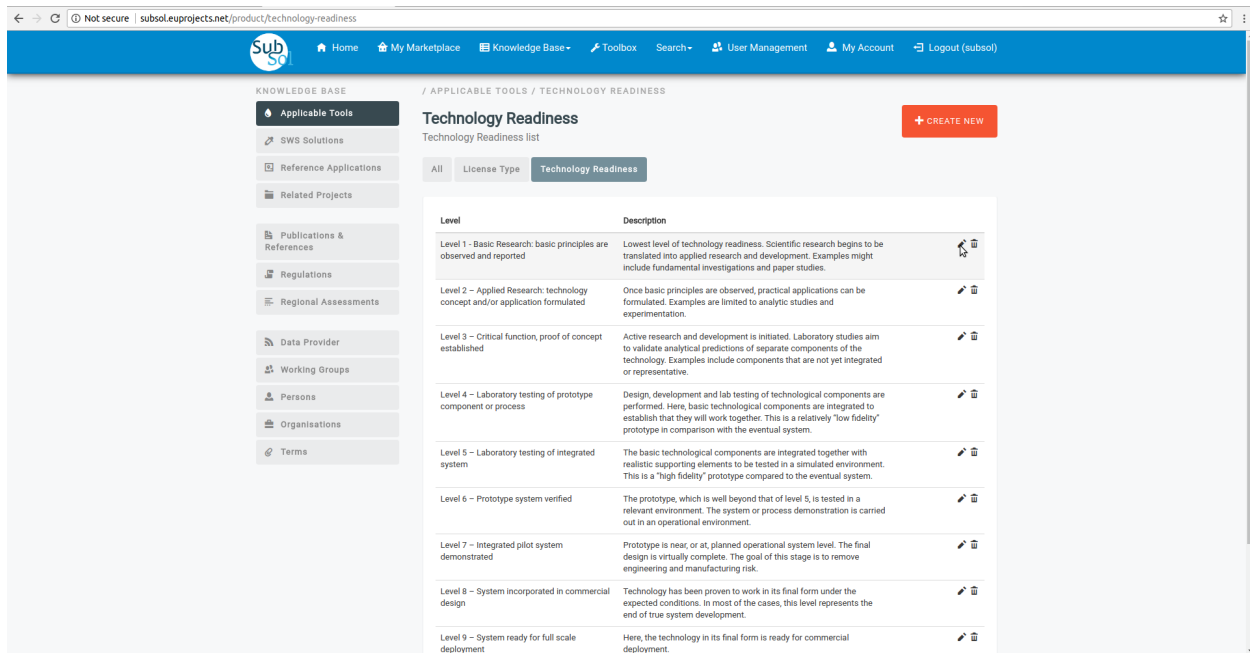
The screenshot shows the 'Technology Readiness' form in the SubSol Knowledge Base. The form is titled 'Technology Readiness' and 'Technology Readiness Add'. It has a sidebar with navigation links: 'Applicable Tools', 'SWS Solutions', 'Reference Applications', 'Related Projects', 'Publications & References', 'Regulations', 'Regional Assessments', 'Data Provider', 'Working Groups', 'Persons', 'Organisations', and 'Terms'. The main form area has tabs for 'All', 'License Type', and 'Technology Readiness'. The 'Technology Readiness' tab is active, showing a form with a 'Level' dropdown set to '10' and a 'Description' text area containing 'Lev 10'. A 'Save' button is at the bottom left of the form, and a '+ CREATE NEW' button is at the top right. The footer of the page includes the SubSol logo, a statement about funding from the European Union's Horizon 2020 research and innovation programme, and links for 'Project', 'Terms', 'About', 'Contact', and 'Disclaimer'.

- A pop-up message confirms that you have successfully create a new Technology Readiness entry.

The screenshot shows the 'Technology Readiness' list view in the SubSol Knowledge Base. The page title is 'Technology Readiness' and 'Technology Readiness list'. It has a sidebar with navigation links: 'Applicable Tools', 'SWS Solutions', 'Reference Applications', 'Related Projects', 'Publications & References', 'Regulations', 'Regional Assessments', 'Data Provider', 'Working Groups', 'Persons', 'Organisations', and 'Terms'. The main form area has tabs for 'All', 'License Type', and 'Technology Readiness'. The 'Technology Readiness' tab is active, showing a table with 9 rows. Each row has a 'Level' column and a 'Description' column. The 'Level' column contains levels from 1 to 9, and the 'Description' column contains corresponding descriptions. Each row has a 'Modify' pencil icon and a 'Delete' trash icon. A pop-up message at the bottom left of the page states 'Entity has been created. View Activity'.

Level	Description
Level 1 - Basic Research: basic principles are observed and reported	Lowest level of technology readiness. Scientific research begins to be translated into applied research and development. Examples might include fundamental investigations and paper studies.
Level 2 - Applied Research: technology concept and/or application formulated	Once basic principles are observed, practical applications can be formulated. Examples are limited to analytic studies and experimentation.
Level 3 - Critical function, proof of concept established	Active research and development is initiated. Laboratory studies aim to validate analytical predictions of separate components of the technology. Examples include components that are not yet integrated or representative.
Level 4 - Laboratory testing of prototype component or process	Design, development and lab testing of technological components are performed. Here, basic technological components are integrated to establish that they will work together. This is a relatively "low fidelity" prototype in comparison with the eventual system.
Level 5 - Laboratory testing of integrated system	The basic technological components are integrated together with realistic supporting elements to be tested in a simulated environment. This is a "high fidelity" prototype compared to the eventual system.
Level 6 - Prototype system verified	The prototype, which is well beyond that of level 5, is tested in a relevant environment. The system or process demonstration is carried out in an operational environment.
Level 7 - Integrated pilot system demonstrated	Prototype is near, or at, planned operational system level. The final design is virtually complete. The goal of this stage is to remove engineering and manufacturing risk.
Level 8 - System incorporated in commercial design	Technology has been proven to work in its final form under the expected conditions. In most of the cases, this level represents the end of true system development.
Level 9 - System ready for full scale deployment	Here, the technology in its final form is ready for commercial deployment.

- Edit Technology Readiness
- Click on "Modify" pencil-item.



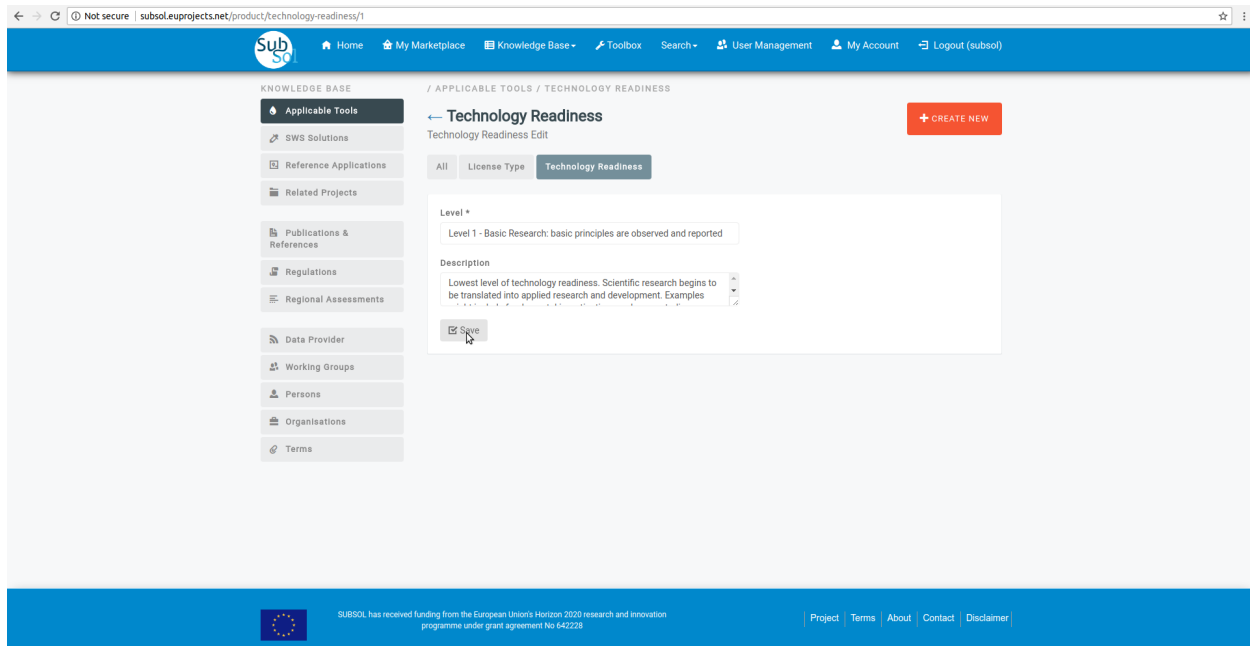
KNOWLEDGE BASE / APPLICABLE TOOLS / TECHNOLOGY READINESS

Technology Readiness
Technology Readiness list

CREATE NEW

Level	Description
Level 1 - Basic Research: basic principles are observed and reported	Lowest level of technology readiness. Scientific research begins to be translated into applied research and development. Examples might include fundamental investigations and paper studies.
Level 2 - Applied Research: technology concept and/or application formulated	Once basic principles are observed, practical applications can be formulated. Examples are limited to analytic studies and experimentation.
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- Provide your changes and click on “Save” button.



KNOWLEDGE BASE / APPLICABLE TOOLS / TECHNOLOGY READINESS

Technology Readiness
Technology Readiness Edit

CREATE NEW

Level *

Level 1 - Basic Research: basic principles are observed and reported

Description

Lowest level of technology readiness. Scientific research begins to be translated into applied research and development. Examples

Save

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Project | Terms | About | Contact | Disclaimer

- A pop-up message confirms that you have successfully update your Technology Readiness entry. .

← → 🔒 Not secure | subsoleupprojects.net/product/technology-readiness

SubSol

HomeMy MarketplaceKnowledge Base+ToolboxSearch+User ManagementMy AccountLogout (subsol)

KNOWLEDGE BASE

Applicable Tools

SWS Solutions

Reference Applications

Related Projects

Publications & References

Regulations

Regional Assessments

Data Provider

Working Groups

Persons

Organisations

Terms

/ APPLICABLE TOOLS / TECHNOLOGY READINESS

Technology Readiness

Technology Readiness list

+ CREATE NEW

AllLicense TypeTechnology Readiness

Level	Description		
Level 1 - Basic Research: basic principles are observed and reported	Lowest level of technology readiness. Scientific research begins to be translated into applied research and development. Examples might include fundamental investigations and paper studies.		
Level 2 - Applied Research: technology concept and/or application formulated	Once basic principles are observed, practical applications can be formulated. Examples are limited to analytic studies and experimentation.		
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Level 8 - System incorporated in commercial design	Technology has been proven to work in its final form under the expected conditions. In most of the cases, this level represents the end of true system development.		
Level 9 - System ready for full scale deployment	Here, the technology in its final form is ready for commercial deployment.		

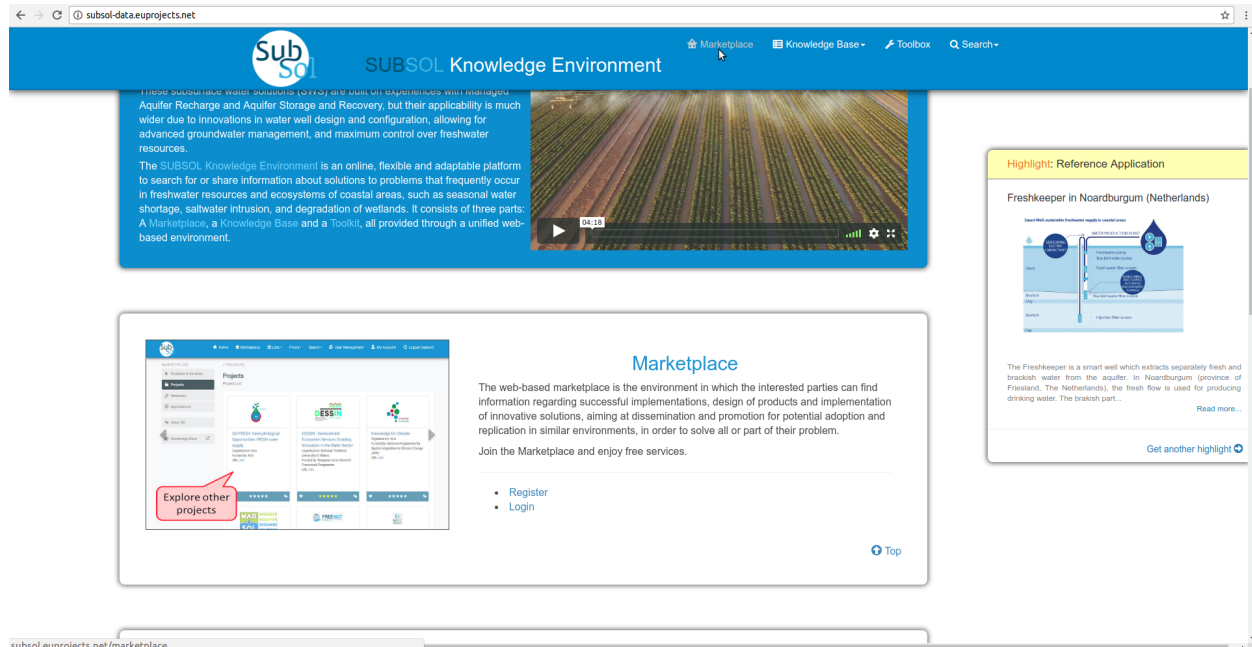
Entity has been updated.
View Activity

5.1 Organization Representative

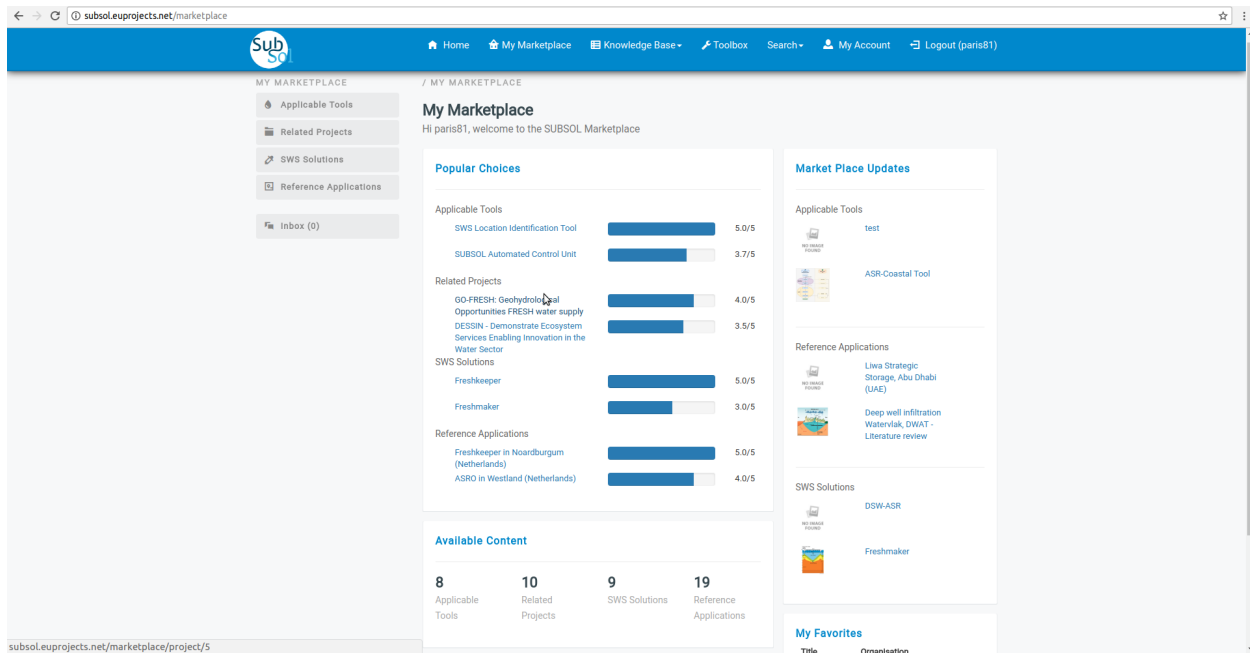
5.2 Simple User

1. Dashboard

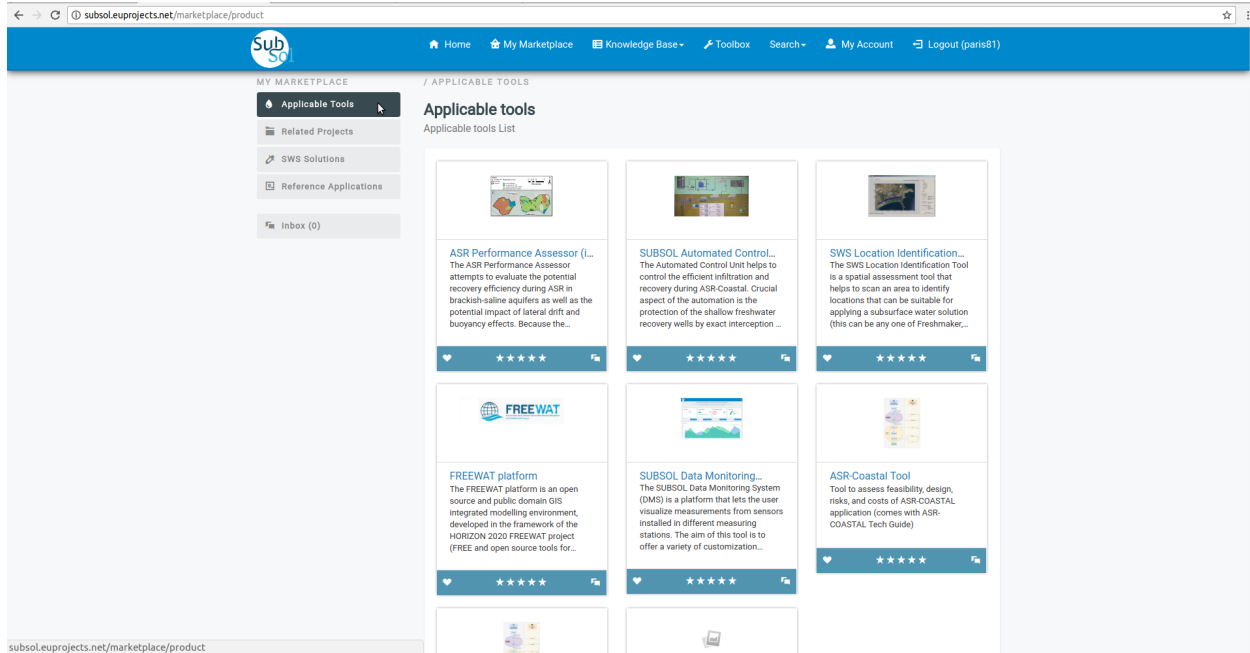
- Click on “Marketplace” Menu-item.



- The user can review the marketplace area.

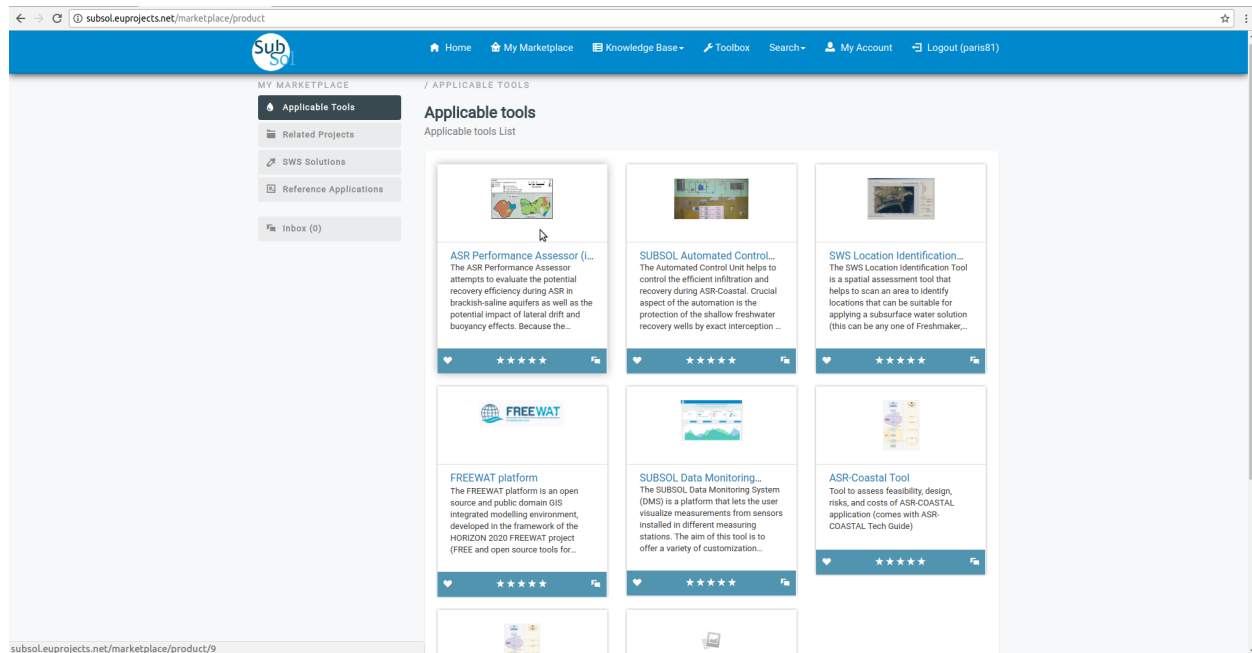


2. Applicable Tools

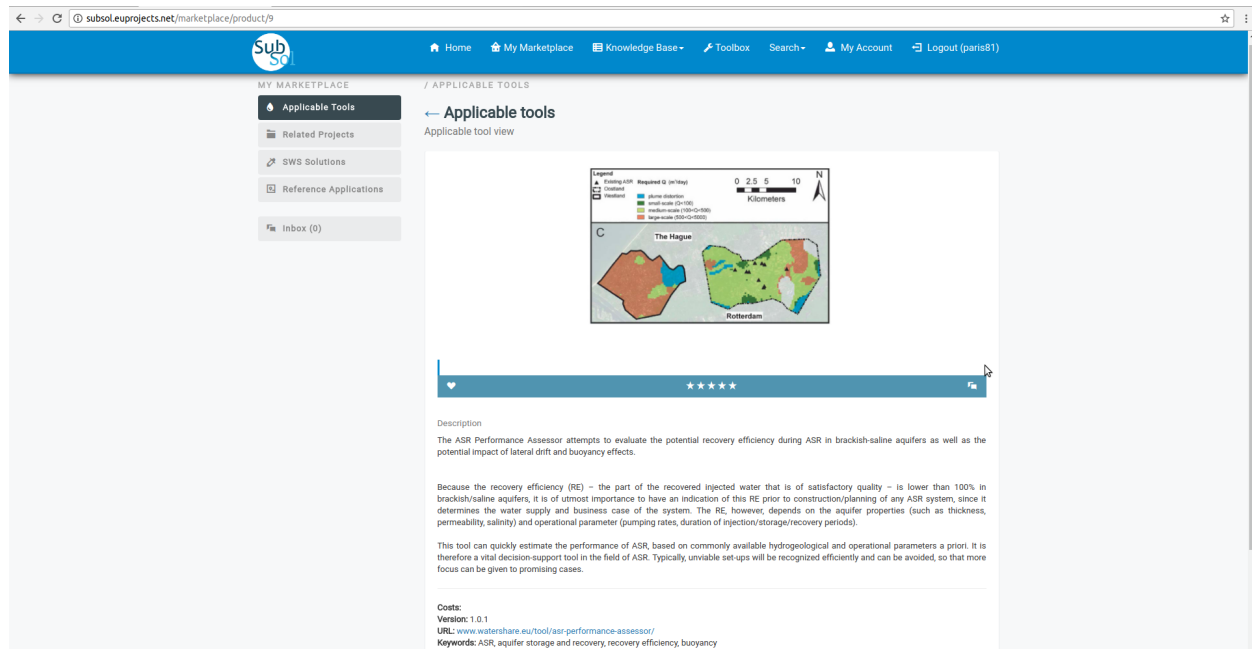


2.1 Open

- Click on preferred icon view from applicable list.

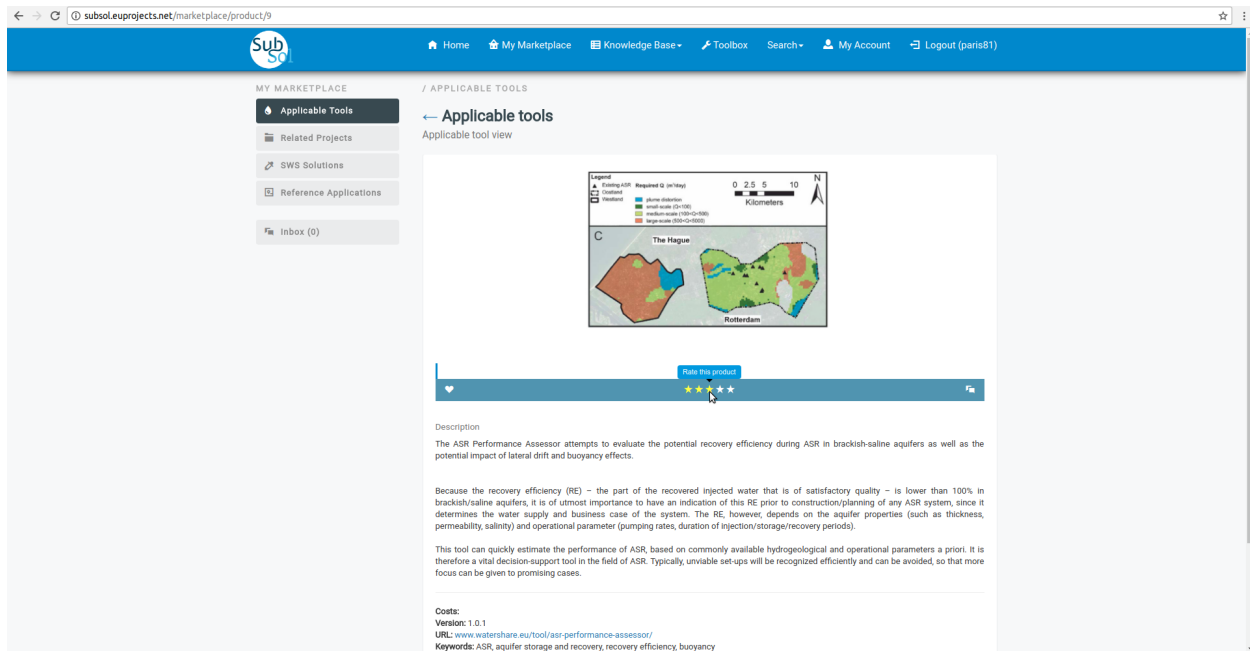


- View full information available for this item.



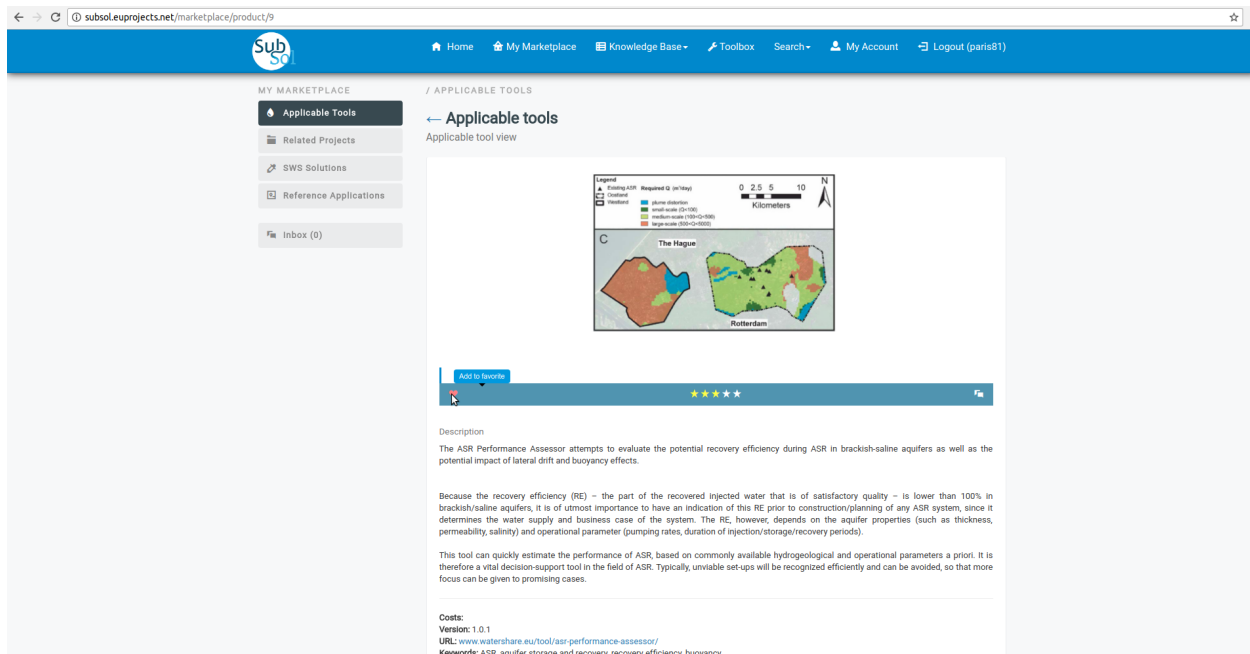
2.2 Rate a product

- Click on “Rate a product” stars to evaluate it.



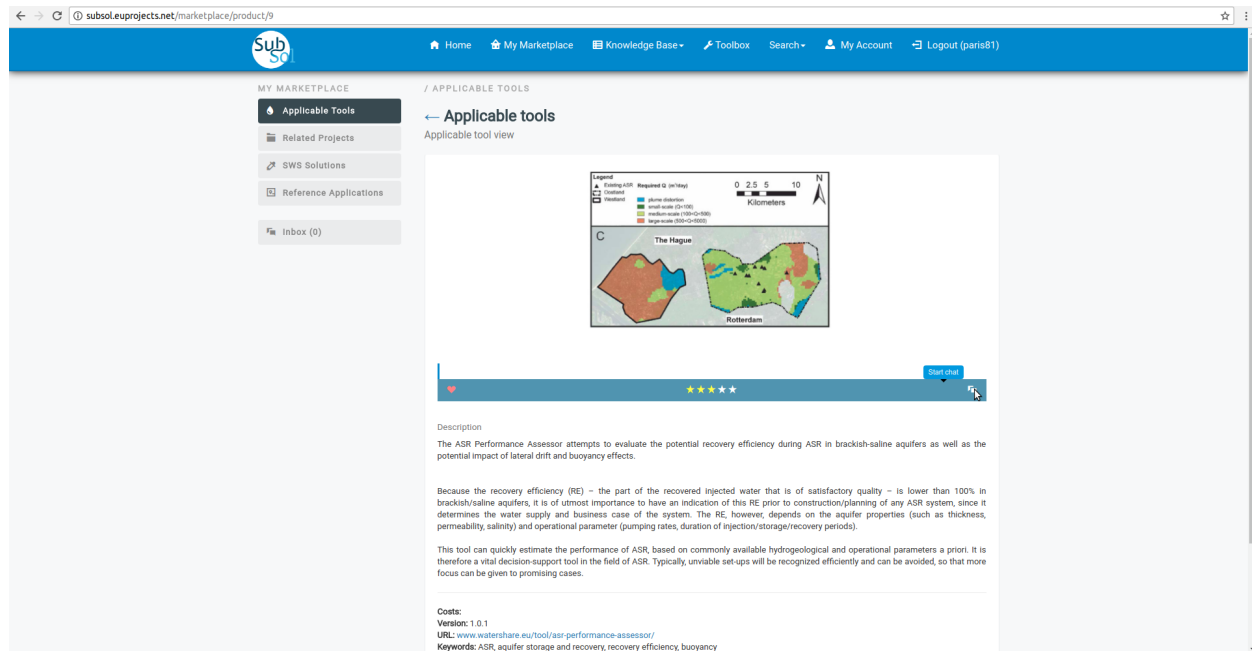
2.3 Add to Favorites

- Click on “heart” button to add this product to favorites.



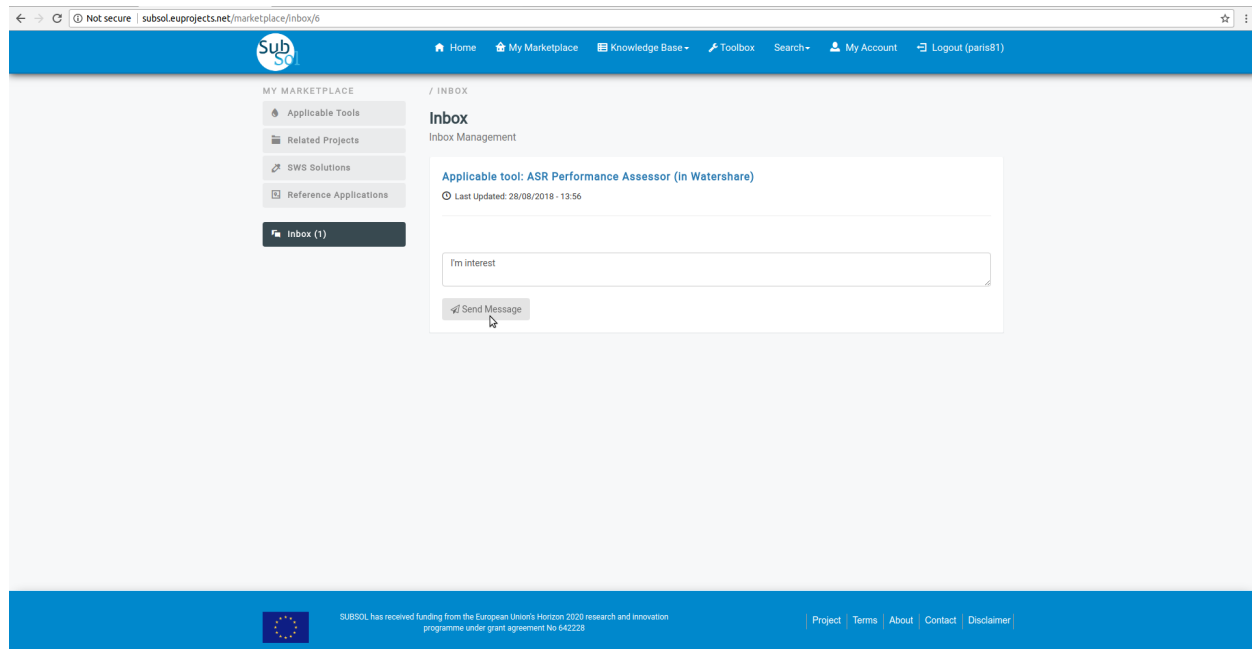
2.4. Chat

- Click on “Start Chat” button.



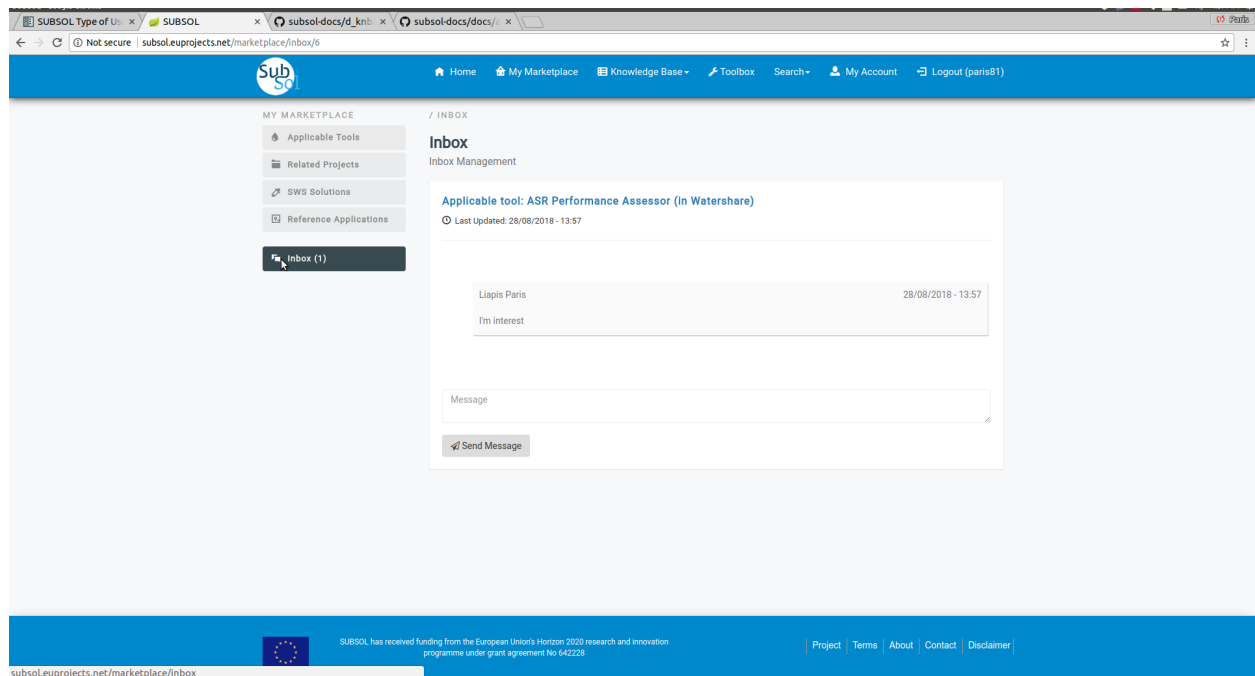
The screenshot shows the 'Applicable Tools' page for the 'ASR Performance Assessor' tool. The left sidebar contains navigation links: 'Applicable Tools', 'Related Projects', 'SWS Solutions', 'Reference Applications', and 'Inbox (0)'. The main content area displays a map of the region around The Hague and Rotterdam, with a legend indicating 'Required Q (m³/day)' and 'Recovery efficiency (RE)'. Below the map, there is a description of the tool, its version (1.0.1), and its URL. The 'Start phase' button is visible at the bottom right of the map area.

- Provide your message and click on “save” button.



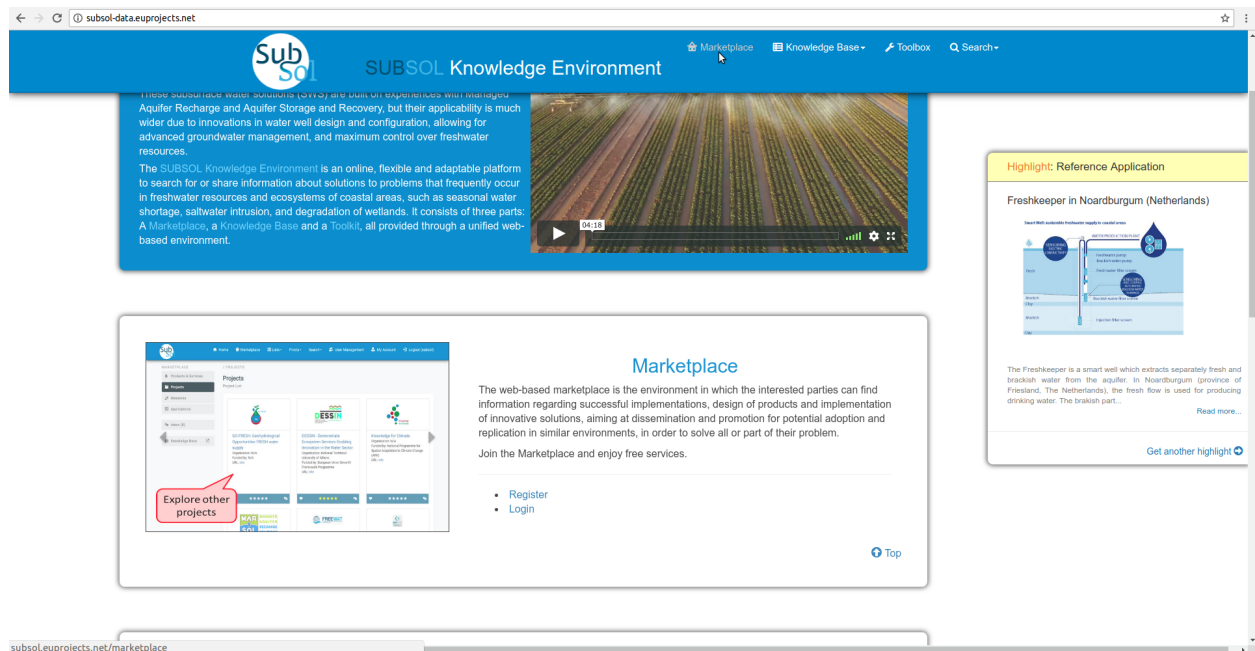
The screenshot shows the 'Inbox' page, which is titled 'Inbox Management'. It lists the 'Applicable tool: ASR Performance Assessor (in Watershare)' with a 'Last Updated' date of 28/08/2018 - 13:56. Below this, there is a text input field containing 'I'm interest' and a 'Send Message' button. The bottom of the page features a blue footer with the European Union flag, funding information, and navigation links: 'Project', 'Terms', 'About', 'Contact', and 'Disclaimer'.

- You have successfully send your message to Manager.

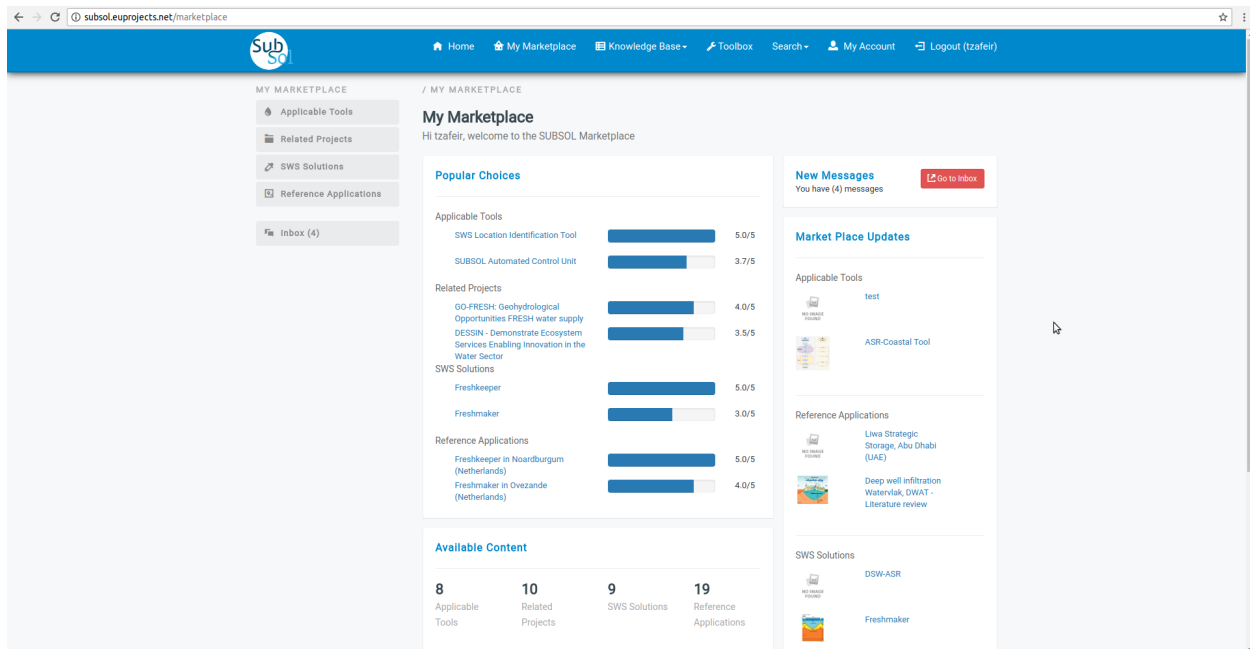


5.3 Manager

1. Manager View



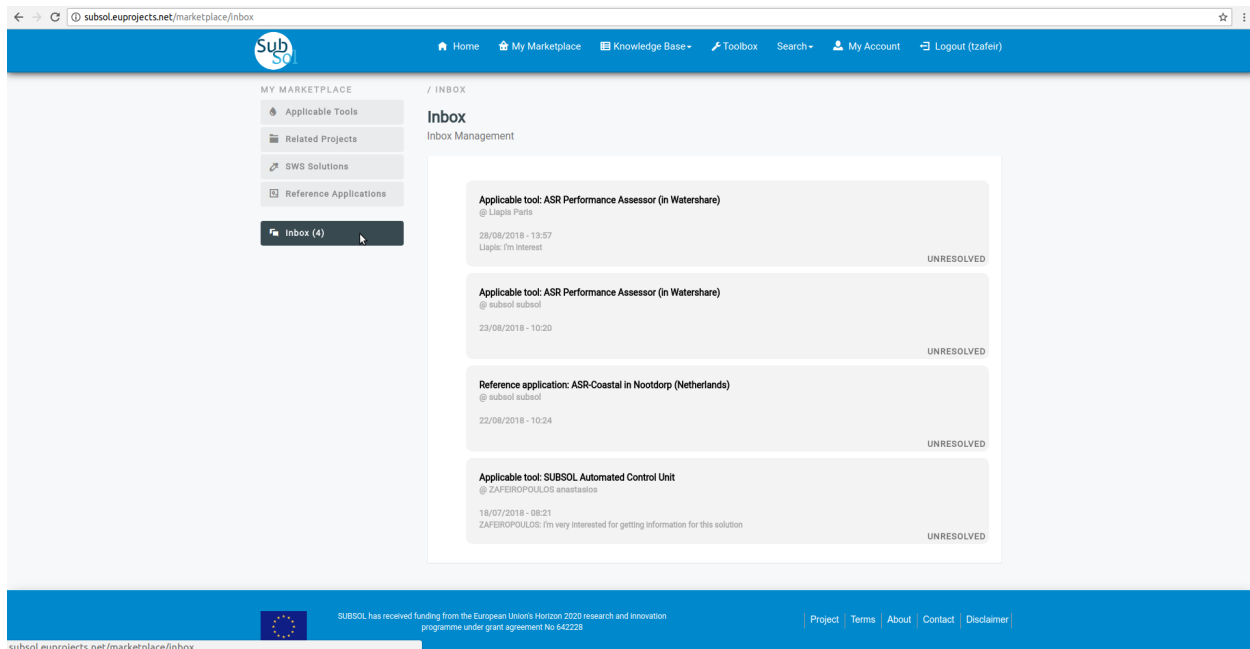
- Initially the user must login with manager account privileges.



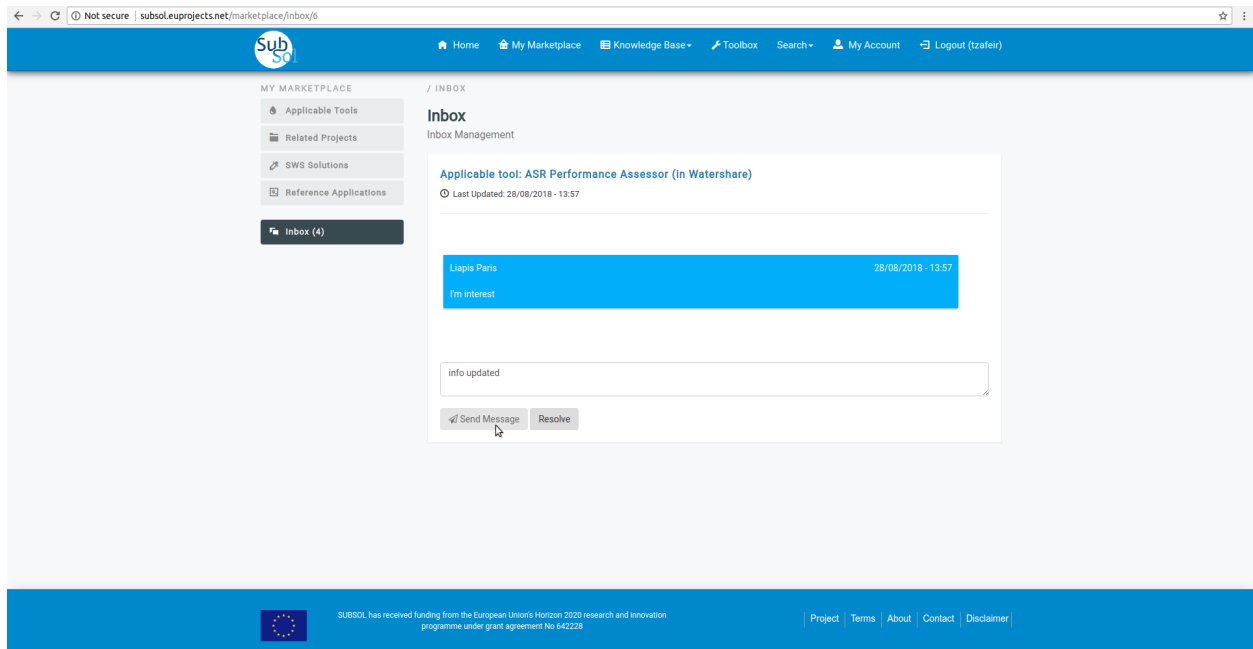
2. Inbox

2.1. Send Messages

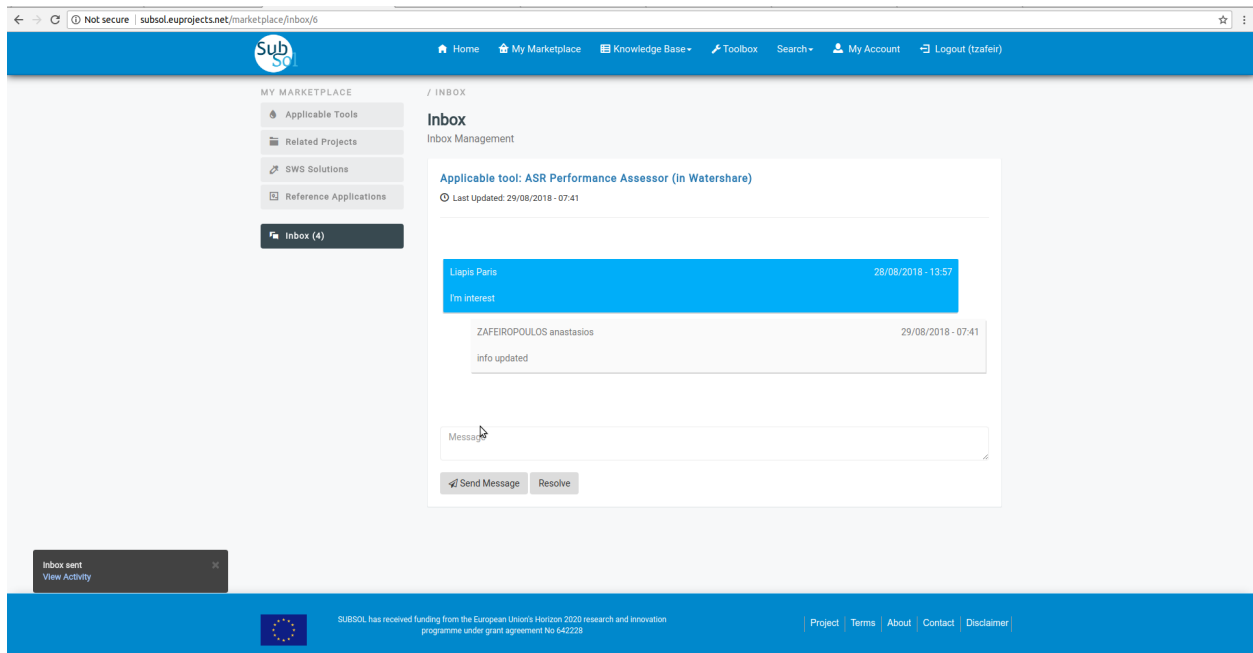
- Click on “inbox” menu-item.



- Write your answer and click on “Send Message” menu-item.

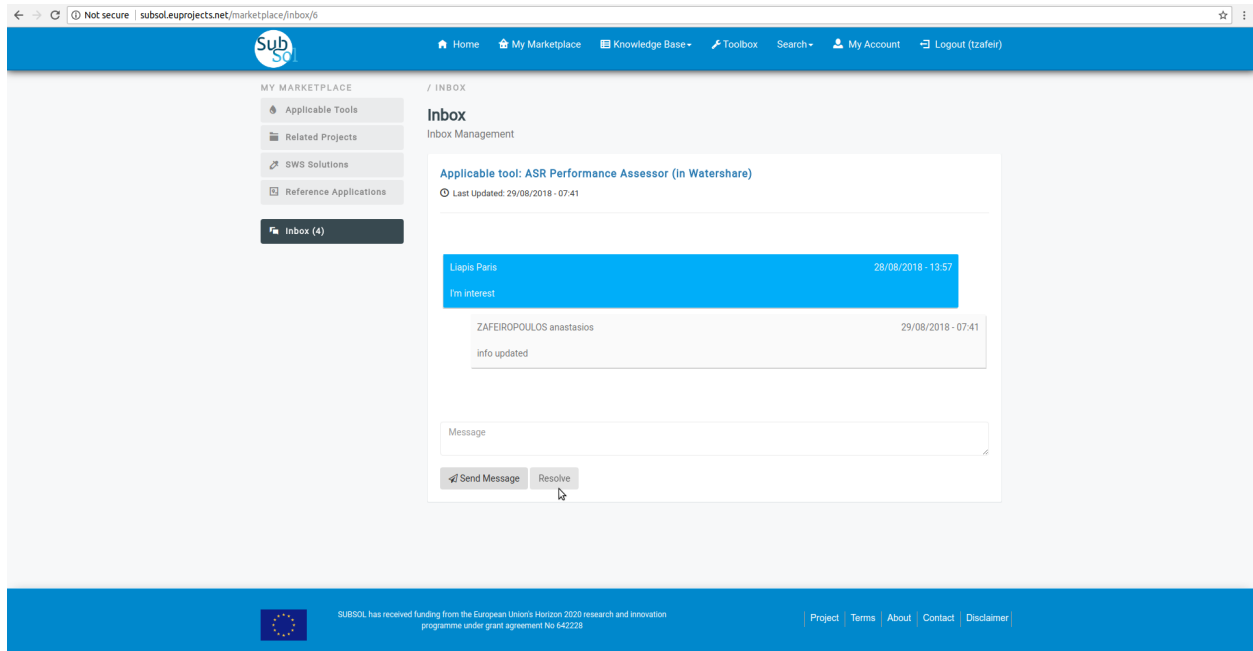


- A pop-up message confirms that you have successfully send your answer.

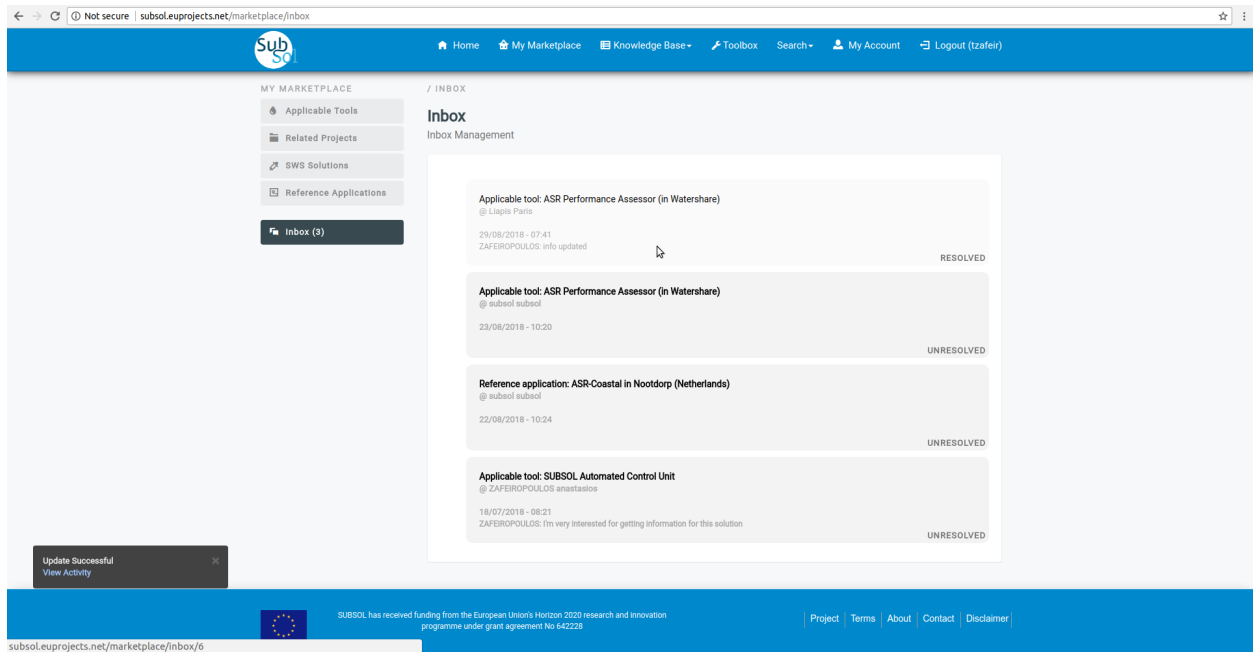


2.2. Resolve Issue

- Click on “Resolve” button.



- A pop-up message confirms that you have successfully update your chat status.



CHAPTER 6

Toolbox

6.1 Data Monitoring System

6.2 SWS Screening Tool

CHAPTER 7

Indices and tables

- `genindex`
- `modindex`
- `search`