

FREE and open source software tools for WATER resource management

FREEWAT a water management tool enhancing the participatory approach in the Stampriet aquifer system region

35th IGC - [paper 2031](#)

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WHAT IS FREEWAT?

FREEWAT is an HORIZON 2020 project financed by the EU Commission under the call WATER INNOVATION: BOOSTING ITS VALUE FOR EUROPE. FREEWAT aims at promoting water resource management by simplifying the application of the Water Framework Directive and other EU water related Directives by means of innovative GIS integrated open source and public domain ICT simulation tools (the FREEWAT platform).

Main impact: help produce scientifically & technically based policy making based on:

- data and innovative data analysis tools and
- support a participatory approach during the entire case study.

FREEWAT main result is an open source and public domain GIS integrated modelling environment for the simulation of water quantity and quality in surface water and groundwater with an integrated water management and planning module.

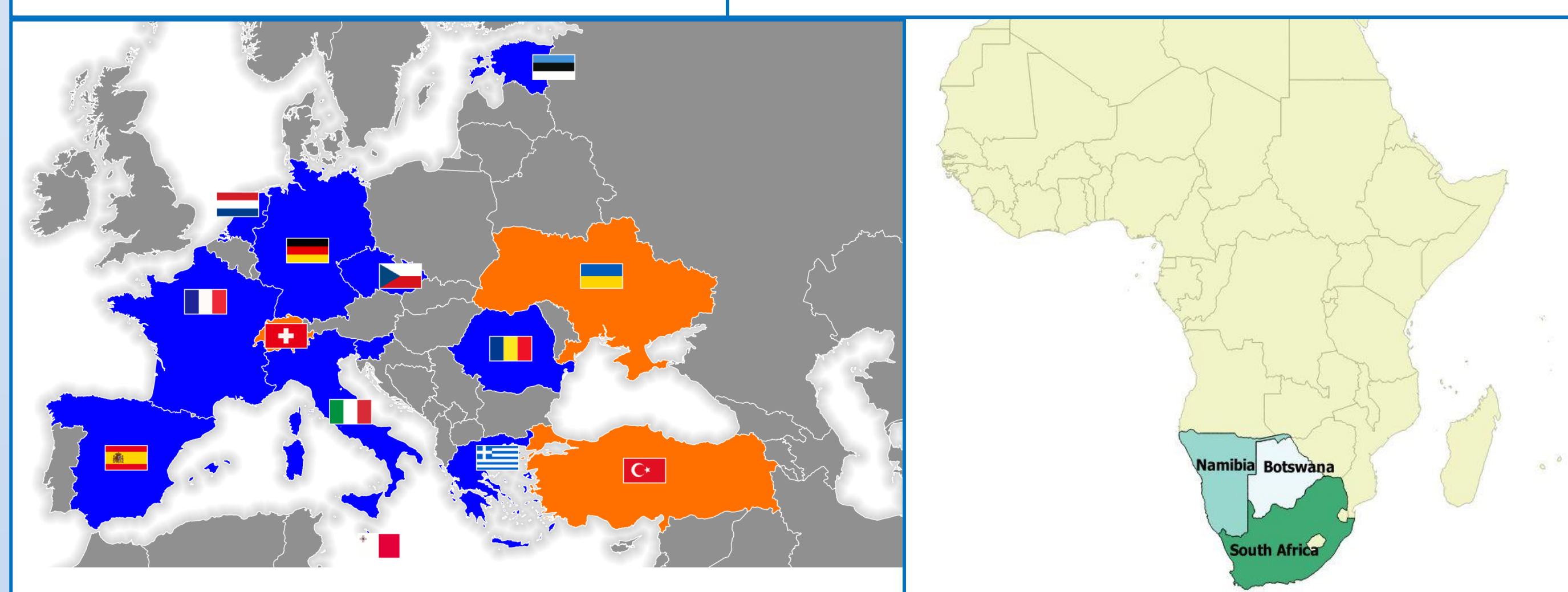
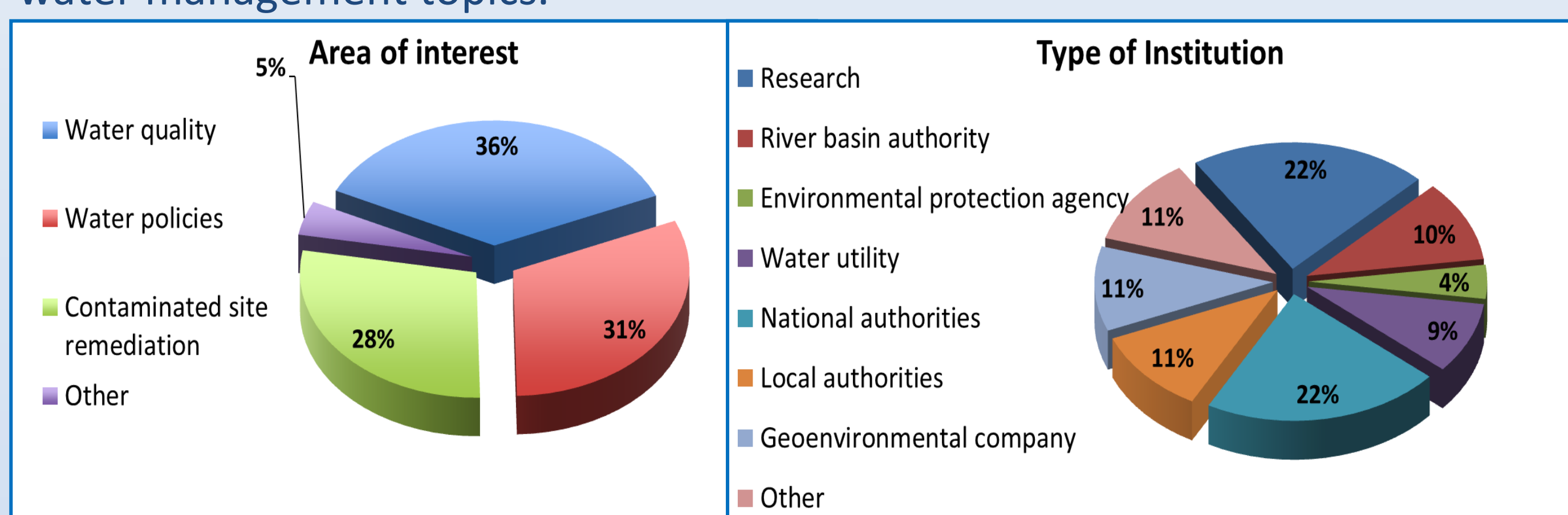
Capabilities integrated within FREEWAT:

- a dedicated module for calibration, uncertainty calculation and sensitivity analyses ;
- a module for solute transport in the unsaturated zone;
- a module for crop growth and yield and rural water management and
- tools for the analyses, interpretation and visualisation of the hydrochemical data.

FREEWAT MAIN OBJECTIVES

1. coordinate previous EU and national research to integrate existing software modules for water management in a single environment and
2. support FREEWAT application in an innovative participatory approach gathering technical staff and relevant stakeholders (in primis policy and decision makers) in designing scenarios for the proper application of water policies. The open source characteristics of the platform makes this an initiative "ad includendum" as further research institutions, private developers etc. may contribute to the platform development.

FREEWAT will be applied to **10 case studies in the EU**, 3 in neighboring countries (**Switzerland, Turkey and Ukraine**) and the **Stampriet** aquifer system (**Botswana, Namibia and South Africa**). The case studies address different issues on WFD, GWD and other water related Directives and rural water management topics.

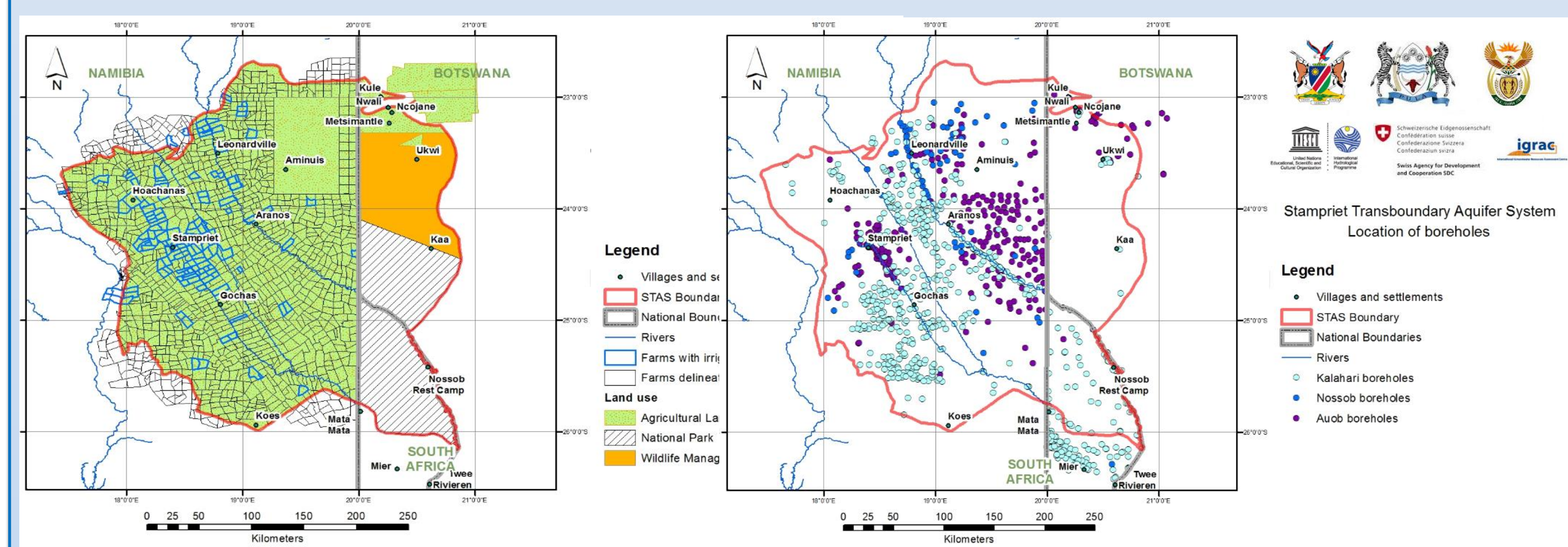


Role UNESCO-IHP and IGRAC

1. IGRAC and UNESCO-IHP are working in close cooperation on the Stampriet case study and will bring to FREEWAT their expertise in groundwater governance and experience gained in the GGRETA project.
2. IGRAC will also introduce the GGIS & GGMN to the project partners as a contribution to WP3 - Capacity Building.

STAMPRIET TRANSBOUNDARY AQUIFER SYSTEM

1. Groundwater resources in the Stampriet case study are the mayor sources of domestic water supply. The management challenge is exacerbated by the size of this transboundary aquifer.
2. Development of a groundwater model within the FREEWAT platform, including management scenarios'.



Acknowledgements

This paper is presented within the framework of the project FREEWAT, which has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement n. 642224.

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