Onfly

# HOW RTE ENSURES THE CONTINUITY OF THE POWER GRID THROUGH RELIABLE DATA

## USE CASE

Rte

BIM&CO
La continuité numérique pour la construction

# Preface

For over two years, R**TE has been using Onfly**, the solution from **BIM&CO**, to digitize its high-voltage substations.

This company, **a key player in the energy sector,** carries out a public service mission to ensure that electricity is always available throughout the country.

To effectively meet this requirement, RTE must optimize **engineering and maintenance** operations and have a clear overview of the entire network, especially the high-voltage substations.

Given the large number of substations built over decades, retrieving reliable and up-to-date plans remains a major challenge.

Existing plans take many forms – old paper sketches, PDF files, AutoCAD drawings – which complicates their use. Hence, the importance of moving towards **a single format** and **standardized** workflow.

It is in this context that RTE launched the JUMP project, with the objective of **digitizing** all of its high-voltage substations by creating **3D mock-ups**, in order to standardize and more efficiently maintain this asset base.

## Key Figures – RTE

👷 10,000 employees

🌿 94% of the energy mix transported by RTE comes from low-carbon sources, supporting the energy transition

📊 1,400 TWh/year of electricity transported, covering nearly all of France's consumption

# Prerequisites for an Effective BIM Strategy

Modeling such a large number of **mock-ups** is a massive, multi-year project that requires clear **organization and strict discipline** in their development.

To produce a high volume of models efficiently, it's essential to structure and standardize the production process. This approach **industrializes** workflows, accelerates modeling, simplifies updates, ensures consistency across facilities, and helps reduce **production costs.**

To achieve this, models must follow a **unified format** and share as many common elements as possible.

This standardization leads to **faster modeling**, easier **maintenance**, and enables cross-facility analysis.

To make this project possible, RTE teams chose to focus on three key tools:

- **A point cloud management solution**

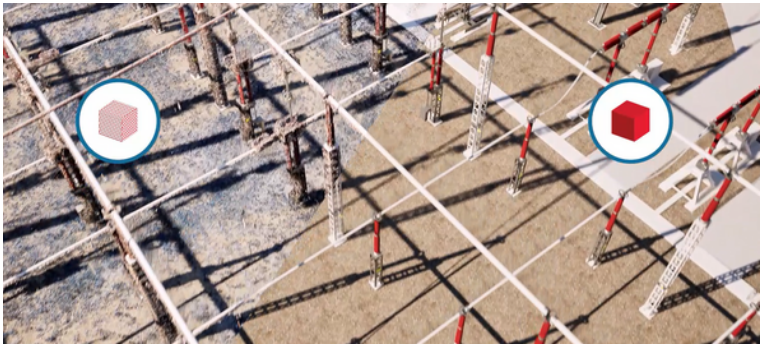
  Used to precisely characterize the components of an as-built structure.

- **A modeling tool (Autodesk Revit)**

  To create the 3D mock-ups.

- **A BIM object library (Onfly)**

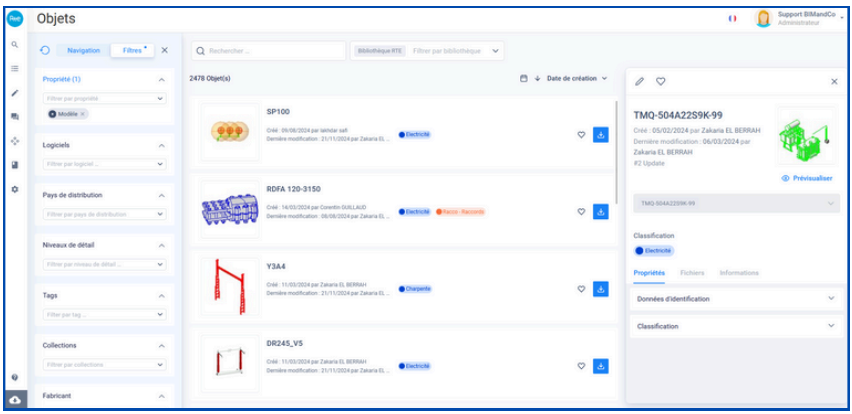
  To centralize and harmonize objects, with the goal of optimizing the production of mock-ups.



*Point cloud and 3D model of a high-voltage substation*

The objective is to have consistent **mock-ups with shared elements**.

This is why RTE chose the Onfly solution — to ensure the consistency and **centralization** of all objects used in BIM models.




***The RTE library on ONFLY: BIM objects and data***

Its clear interface makes it easy to use for a wide range of users.

All objects included in the high-voltage substation mock-ups must come from **the same database.**

# Setting Up an Object Library with Onfly

The Onfly solution is a cornerstone of the project, as it enables the **centralization** and maintenance of all objects found in high-voltage substations using a **common data nomenclature**.

To do so, it was necessary to implement a **rigorous method** to ensure proper project execution.

The BIM&CO teams worked upstream with RTE to determine a project-specific **configuration for the solution**.

The first step consisted of creating, based on **RTE's immediate modeling** needs, objects in Onfly without 3D geometry, focusing solely **on the data** (identification, model, manufacturer, etc.).

**Non-geometric data**

- Reference
- Nomenclature
- Consumption
- ...

**Geometric data**

- Dimension

From this point on, the objects are created in Onfly.

RTE then calls on **external modelers** to finalize the geometric part.

Once this modeling is complete, RTE performs checks to ensure there are no inconsistencies between the two parts, and the object is validated in the **Onfly solution**.

## Object Creation Process in Onfly

STEPS

### 01 Initial Creation in Onfly

- Start of the process: RTE identifies the needs
- Creation of objects in Onfly with only non-geometric data (Identification, Model, Manufacturer…)

### 02 External 3D Modeling

- Objects are sent to external modelers to finalize the geometric part (3D modeling)

### 03 Coherence Check

- Modeled objects are returned to RTE
- Checks are performed to verify consistency between non-geometric and geometric data

### 04 Validation in Onfly

- If everything is consistent, the object is validated in Onfly

The Onfly solution incorporates this validation process, and each user has a clearly defined role based on their profile:

**Object Creator**
Can create objects within the solution

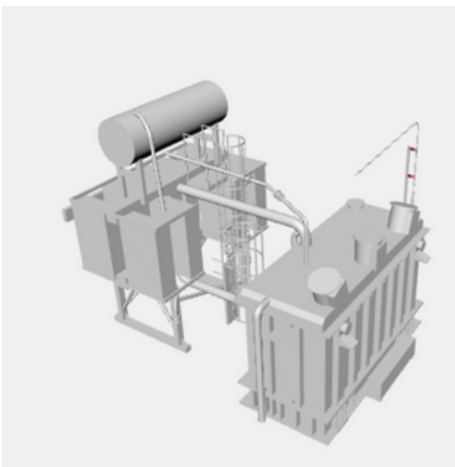
**Standard User**
Can update objects

**Validator**
Approves updates and publishes objects

This method significantly speeds up object creation while maintaining **optimal data quality**.

The initial separation between **product data** and **geometric data** allows RTE to retain control over its nomenclature, saving time for modelers.

### *3D Visualization of a BIM Object*



# Outlook: a Long-Term Project

RTE is currently expanding its library gradually, based on its mock-up modeling needs.

For each new high-voltage substation to be modeled, the teams identify which objects need to be created and which are already available in Onfly.

Each new BIM model helps enrich the Onfly database, making mock-up creation faster and faster, as more and more objects are already modeled.

*"I like to make the analogy with Lego.*
*In this case, the Onfly solution is my box of parts, and for each construction I draw from it — creating new pieces if any are missing."*

**Zakaria EL-BERRAH,**
Application Lead for the JUMP project at RTE

**Key Figures**

**2 years**
of use


**2500 objects**
in Onfly, with a goal of reaching 3,000–4,000

**+ 100 high-voltage substations**
modeled in BIM

Thanks to the object library, modeling time is cut in half. By avoiding the need to remodel the same equipment repeatedly, this approach also reduces the cost of producing mock-ups.

# RTE and ONFLY: A Structured Approach to Transform BIM Management

The JUMP project is a long-term initiative, with many high-voltage substations still to be modeled.

RTE intends to continue enriching its object library based on project needs and to adjust object validation processes in order to keep improving efficiency.

In parallel, the teams conduct regular feedback sessions with BIM&CO experts to enhance the use of the solution.

RTE does not rule out the possibility of developing mock-ups for other types of infrastructure in the future, including buildings.

Onfly plays a key role in the JUMP project by centralizing and standardizing the BIM objects that make up the digital models. This approach makes them easier to reuse and speeds up the production of models for high-voltage substations.

Ultimately, these mock-ups provide RTE teams with reliable plans and a solid foundation to support engineering and maintenance operations on these facilities.

> *My experience in previous BIM projects convinced me that object management is essential.*
>
> *Onfly streamlines the production of BIM objects and standardizes their use, which accelerates modeling and helps optimize costs.*

**Zakaria EL-BERRAH**

Application Lead for the JUMP project at RTE

## Key Takeaways

Onfly is an innovative and high-performance solution for BIM Managers looking to improve their BIM content management.

Thanks to its advanced features and ease of use, Onfly offers numerous benefits for professionals in construction and architecture.

By choosing Onfly, you can optimize your work, increase efficiency and boost productivity, all while ensuring higher quality in your projects.

We therefore encourage all BIM Managers to try our solution for free and discover its benefits firsthand.

Finally, don't forget that our team at BIM&CO is here to support you and answer all your questions about Onfly and BIM content management.

Contact us today to learn more!

**TRY ONFLY**

## About BIM&CO

BIM&CO was founded in 2015 and benefits from over 30 years of technological expertise in the calculation, processing, and distribution of technical data.

BIM&CO is a key technology partner for ensuring the digital continuity of the construction industry.

The company develops innovative information management solutions for architects, engineers, and manufacturers.

Thanks to its expertise, BIM&CO helps clients improve the quality of their construction processes, speed up time-to-market, and reduce operating costs.

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