

## RAILROAD ROUTE SELECTION USING D-SIGHT SOLUTIONS

### CHALLENGE

Italferr's prominent role in the domain of railway engineering and the development of strategic projects for the Italian State Railways Group has allowed the Company to achieve a center-stage position in the international market (Europe, Asia, Africa and Latin America) where it has operated for over twenty years. Italferr is responsible for identifying, selecting, designing and building new routes for the Italian railway network. The challenge in the case considered consists in selecting the best alternative for a new line between Palermo and Catania.

### ACTION

Due to the number and different nature of the criteria against which each possible route needs to be evaluated, Italferr has decided to use D-Sight to compare and rank these options and select the best possible one.

### RESULTS

D-Sight allowed Italferr to carry out an in-depth analysis of the different possible alternatives by ensuring that all criteria – regardless of their nature or scales – were taken into consideration. This allowed Italferr to successfully identify the new route in an efficient and repeatable process while reducing the time spent on this task. Thanks to D-Sight, the process was more efficient and less time consuming.

## CHALLENGE

### Complex multi-criteria evaluation with a need of interactive support

Italferr is the engineering company of the Ferrovie dello Stato Group which operates in the domestic and international markets and provides transport engineering services.

There is an ongoing project for the establishment of a new high-speed train line between Palermo and Catania, the two biggest cities in Sicily. This new link will encourage the transport of people between these two towns with a travel time of 1h 20min instead of 3h 15min.

During the design of the new line between Palermo and Catania, four different alternatives were considered and compared against six families of criteria, all related to financial, technical, functional, and environmental aspects.



## ACTION

Being present in both national and international markets, Italferr participates every year in several projects involving the planning and design of railway lines, nodes, stations, intermodal platforms, etc. Considering the large scale and the technical aspects of such projects, it was important for Italferr to come up with a solid and field tested methodology in order to identify the best solutions.

Italferr discovered D-Sight when working on the Lyon-Turin High-Speed line. Italferr was committed, along with the French Railways, to the final detailed design for the international and national sections of the new Turin-Lyon rail link. The project primarily concerned the 56 km sub-Alpine tunnel and the connection lines between this one and the existing railway network. The D-Sight software was then used to evaluate the impacts of different railway alternatives alignments.

For the ongoing Palermo - Catania project, Italferr conducted the feasibility study by using D-Sight, which allowed choosing among four different feasible solutions.

By using D-Sight's advanced methodology, the global process of choice was improved and became more efficient. We also reduced the time spent for comparing and ranking the alternatives. Using a repeatable process allows us to obtain more solid and rigorous results as well as to increase the clients' and stakeholders' satisfaction especially regarding the motivation of the choice.

**Salvatore D'Alfonso**  
*Technical Direction*  
**Italferr**

## RESULTS

The use of D-Sight allowed Italferr to facilitate the selection process of the best alternative for the line between Palermo and Catania. Not only was the analysis conducted more quickly but it also allowed an in-depth and rigorous evaluation to be carried out of each possibility while considering multiple criteria.

One of the main benefits perceived by Italferr when using D-Sight was the ability that the software provided to convince their client and project sponsor (the infrastructure manager "RFI"). They really appreciated the efficiency and the depth of the analysis achieved thanks to D-Sight.

This phase of the contract was concluded very quickly with the use of D-Sight. Furthermore, it offered a very objective tool for evaluation. Previously choices were based on more subjective considerations thus causing the discussion part of the process to be much longer. The standard decision process offered by D-Sight allowed discussions to be conducted on a true solid basis. These aspects were strengthened with all the visual and interactive tools that made it possible for the stakeholders to get involved in the decision making process.

After using the D-Sight software on the new high-speed track design between Lyon and Turin, this project was the second one in which Italferr used the tool. They plan on using the tool on new oncoming challenging projects as well.

## ABOUT D-SIGHT

**D-Sight develops collaborative decision-making software solutions to help businesses and organizations make better and faster decisions. D-Sight solutions are used for Vendor Selection, Projects Prioritization, Environmental Impact Assessment and other kind of complex decision-making problems, in more than 25 countries.**