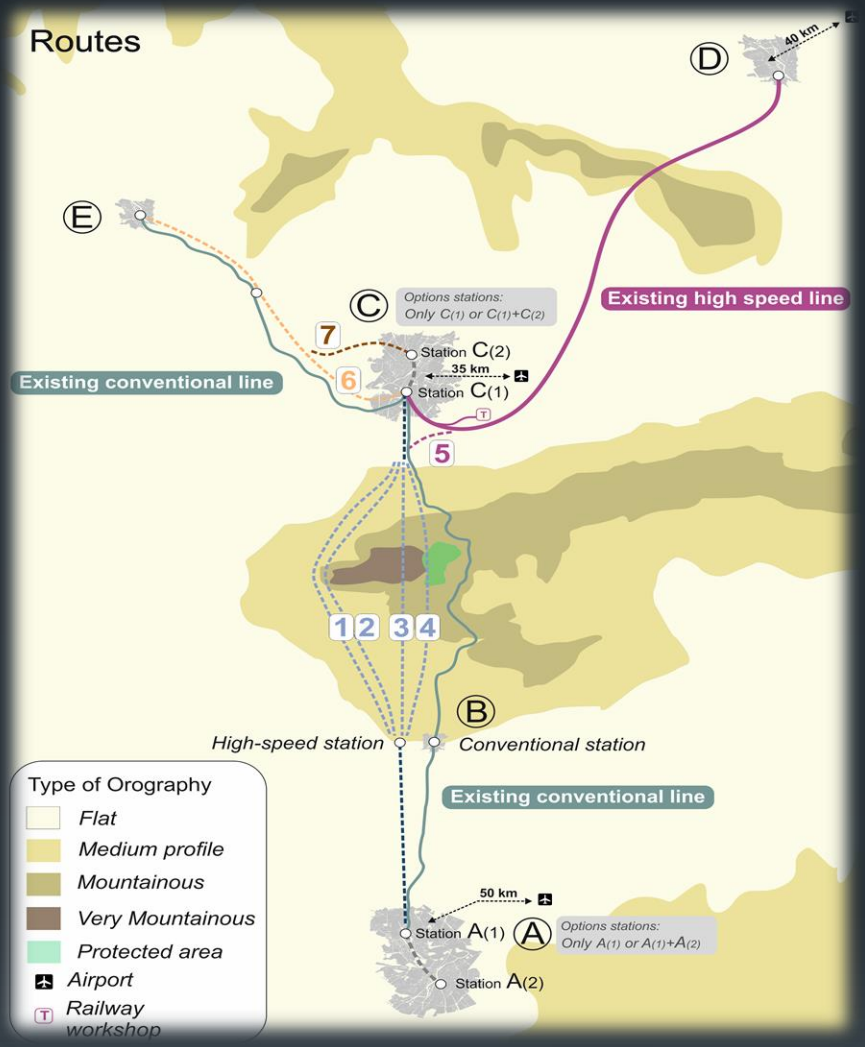
High Speed Planner

Designed by
UIC -International Union of Railways-
FFE -Fundación de Ferrocarriles Españoles-

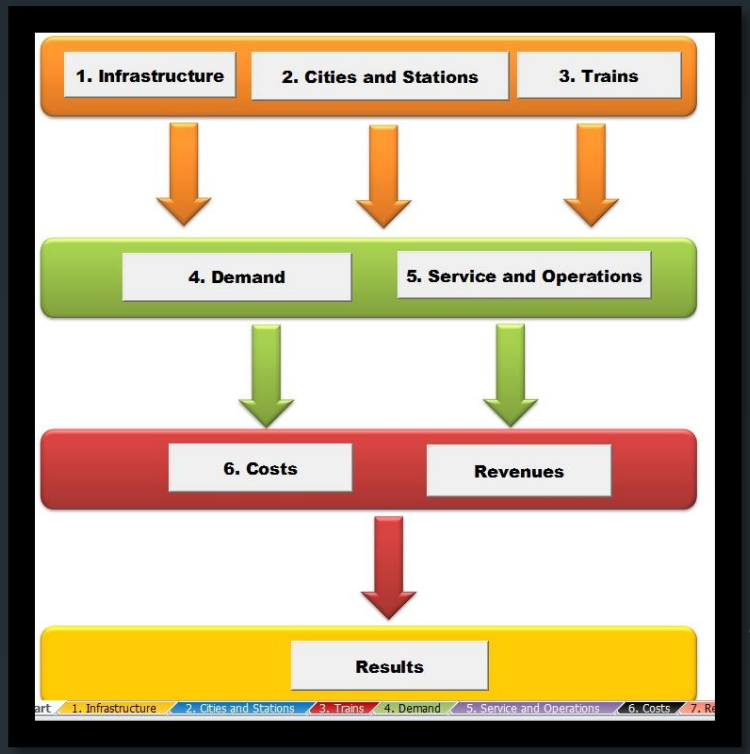


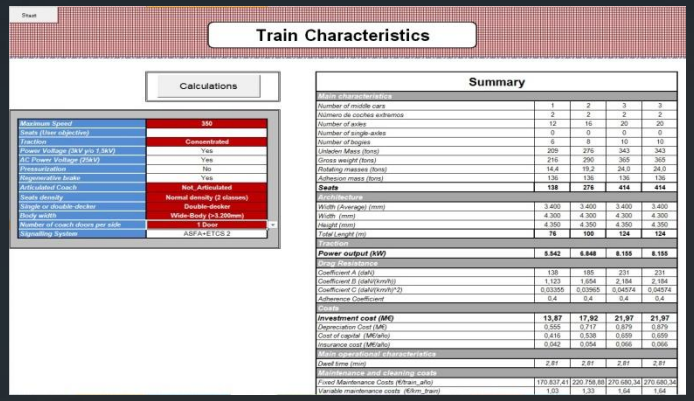
What is the High Speed Planner?

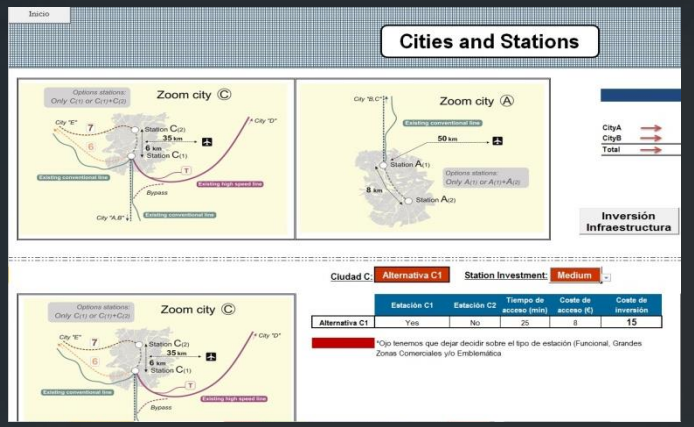
The High Speed Planner is a didactic tool especially designed as a complement to be used during the Training on High Speed Systems.

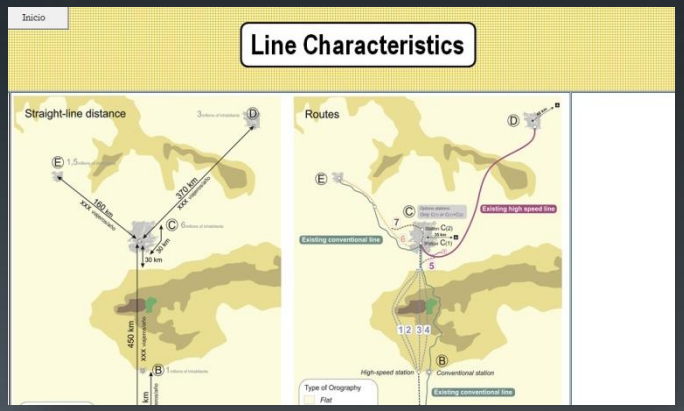
Infrastructure → Cities & Stations → Trains → Demand → Service & Operations → Costs → Revenues → **Output**

HSS main issues



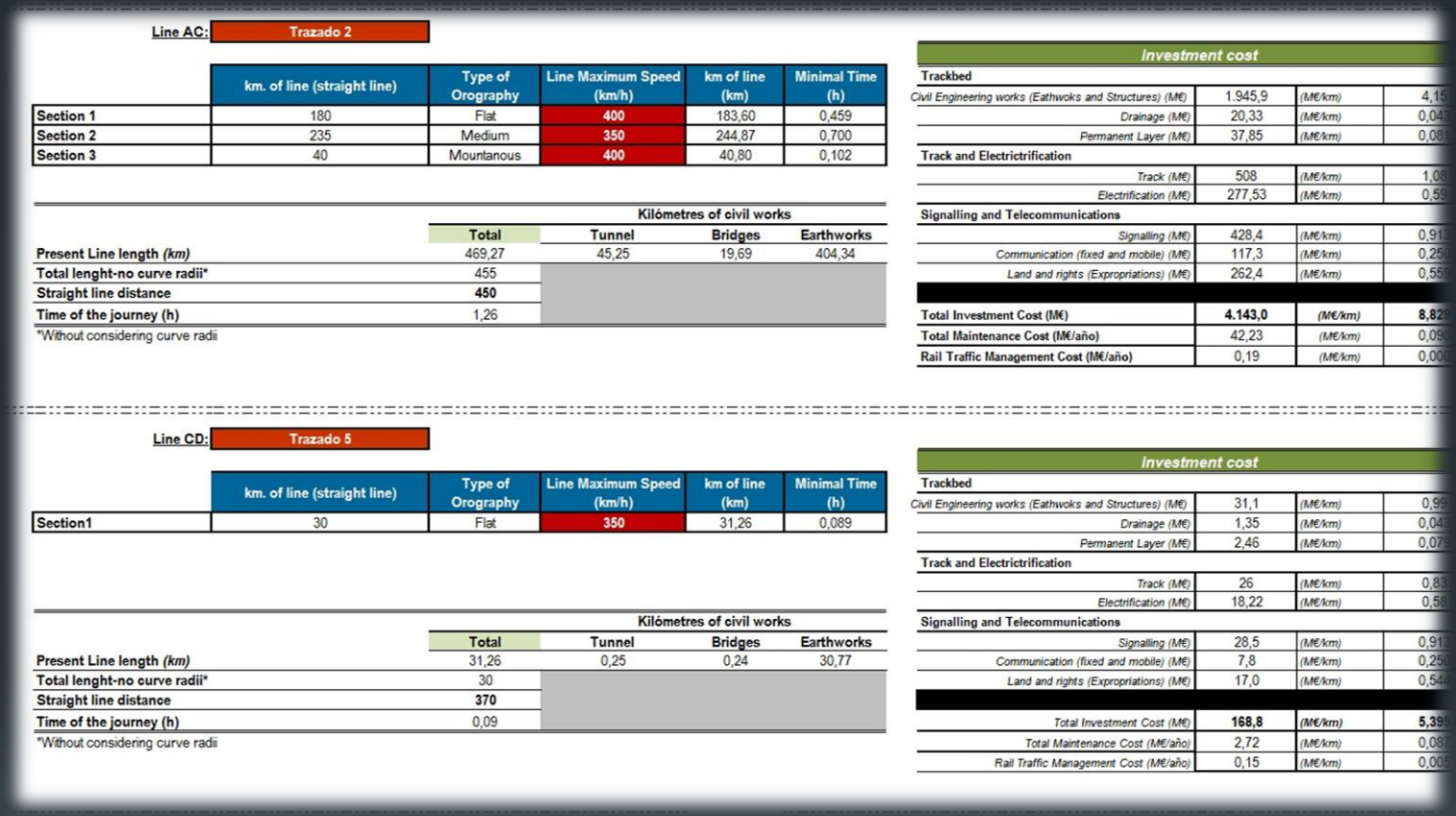






The High Speed Planner allows the user to develop hypotheses taking into account the main parameters to be implemented in every High Speed System project.

The participants of the Training on High Speed Systems will have the opportunity to use this special tool as a part of the training to simulate a real HSS project.



Line AC: Trazado 2

	km. of line (straight line)	Type of Orography	Line Maximum Speed (km/h)	km of line (km)	Minimal Time (h)
Section 1	180	Flat	400	183,60	0,459
Section 2	235	Medium	350	244,87	0,700
Section 3	40	Mountanous	400	40,80	0,102

	Kilómetres of civil works			
	Total	Tunnel	Bridges	Earthworks
Present Line length *(km)*	469,27	45,25	19,69	404,34
Total lenght-no curve radii*	455			
Straight line distance	450			
Time of the journey (h)	1,26			

*Without considering curve radii

Investment cost			
Trackbed			
Civil Engineering works (Eathwoks and Structures) (M€)	1.945,9	*(M€/km)*	4,15
Drainage (M€)	20,33	*(M€/km)*	0,04
Permanent Layer (M€)	37,85	*(M€/km)*	0,08
Track and Electrictrification			
Track (M€)	508	*(M€/km)*	1,08
Electrification (M€)	277,53	*(M€/km)*	0,59
Signalling and Telecommunications			
Signalling (M€)	428,4	*(M€/km)*	0,91
Communication (fixed and mobile) (M€)	117,3	*(M€/km)*	0,25
Land and rights (Expropriations) (M€)	262,4	*(M€/km)*	0,55
Total Investment Cost (M€)	**4.143,0**	*(M€/km)*	**8,82**
Total Maintenance Cost (M€/año)	42,23	*(M€/km)*	0,09
Rail Traffic Management Cost (M€/año)	0,19	*(M€/km)*	0,00

Line CD: Trazado 5

	km. of line (straight line)	Type of Orography	Line Maximum Speed (km/h)	km of line (km)	Minimal Time (h)
Section1	30	Flat	350	31,26	0,089

	Kilómetres of civil works			
	Total	Tunnel	Bridges	Earthworks
Present Line length *(km)*	31,26	0,25	0,24	30,77
Total lenght-no curve radii*	30			
Straight line distance	370			
Time of the journey (h)	0,09			

*Without considering curve radii

Investment cost			
Trackbed			
Civil Engineering works (Eathwoks and Structures) (M€)	31,1	*(M€/km)*	0,99
Drainage (M€)	1,35	*(M€/km)*	0,04
Permanent Layer (M€)	2,46	*(M€/km)*	0,07
Track and Electrictrification			
Track (M€)	26	*(M€/km)*	0,83
Electrification (M€)	18,22	*(M€/km)*	0,58
Signalling and Telecommunications			
Signalling (M€)	28,5	*(M€/km)*	0,91
Communication (fixed and mobile) (M€)	7,8	*(M€/km)*	0,25
Land and rights (Expropriations) (M€)	17,0	*(M€/km)*	0,54
Total Investment Cost (M€)	**168,8**	*(M€/km)*	**5,39**
Total Maintenance Cost (M€/año)	2,72	*(M€/km)*	0,08
Rail Traffic Management Cost (M€/año)	0,15	*(M€/km)*	0,00

All the main elements (social, economic and environmental) will be analyzed in order to take decisions and see the resulting outcomes.