RAILWAY PROJECT

UNDERGROUND SERVICES

Identification of interferences with track aligment

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MINISTERIO
DE TRANSPORTE
Y OBRAS PÚBLICAS

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1. Purpose of the report

With the objective of identifying the services present in the area of adaptation of the rail track, information was requested from the specific area to all providers, namely: drinking water network, telephone services, fiber optics, electricity, gas pipes and fuels, sewage networks.

1.1. Information Management

Full georeferenced information has been requested from all networks. Such data have been received in different formats. Information have been unified on a flat georeferenced basis in UTM coordinates in Autocad (.dwg) format that complements this report. The name of the layers indicates the name of the corresponding service.

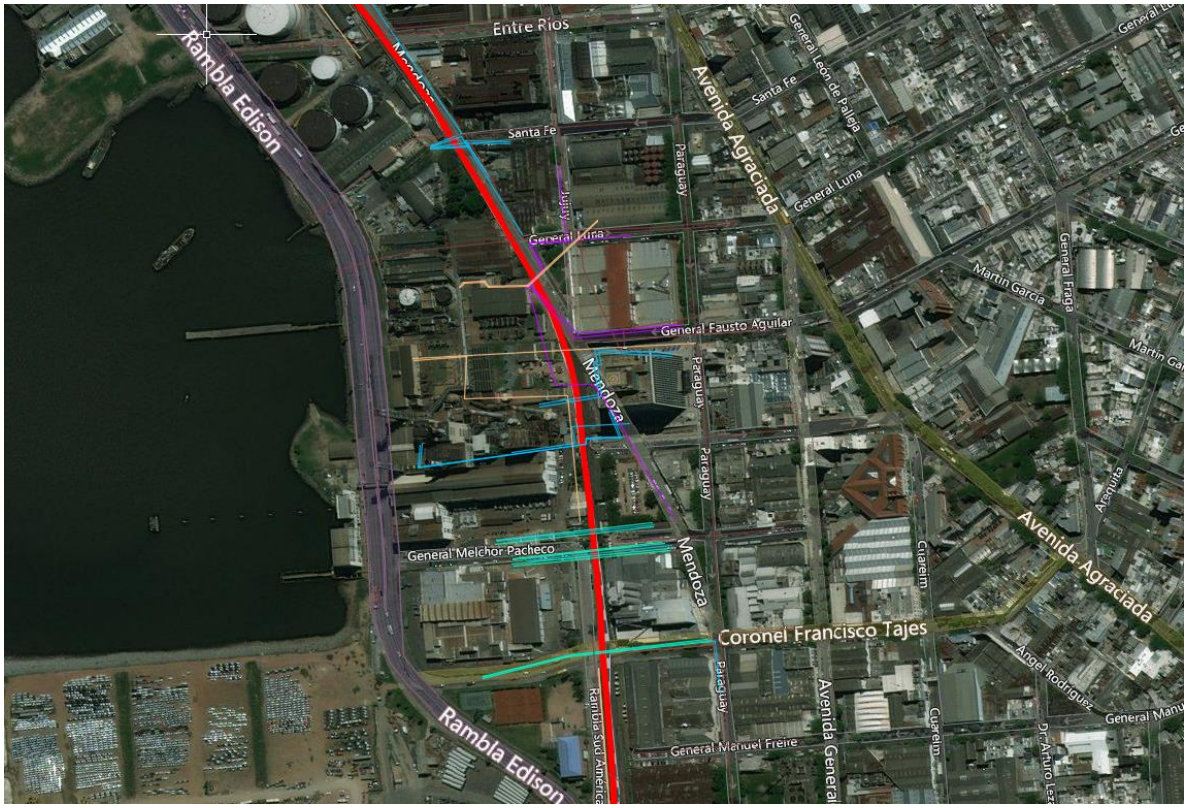
The following table lists the names of the layers and the corresponding service.

Detail table of the layers of the present services

Central Railway Project - Services		
Project number	10892 2050 1	
Layer Name	**Description**	**Obs**
01 - OSE Red	Water Pipe Network	Minor Network
01 - OSE 5ta línea de bombeo	Water Pipe Network	Main Network
01 - OSE Troncales	Water Pipe Network	Main Network
01 - OSE Red 200 y 250	Water Pipe Network	Minor Network
01 - OSE Tuberías	Water Pipe Network	Minor Network
01 - Saneamiento	Sewage networks	
02-ANTEL - Canalización	Phone Network - Underground	
02-ANTEL - FO 1	Phone Network - Fibre Optic	
02-ANTEL - FO 2	Phone Network - Fibre Optic	
02-ANTEL - Red Canalizada	Phone Network - Underground	
02-ANTEL - Red Enterrada	Phone Network - Underground	
03 - UTE - 150kV	Electric distribution Network	High-Voltage
03 - UTE - 500kV	Electric distribution Network	High-Voltage
03 - UTE - 500kV Futura	Electric distribution Network	High-Voltage cable project
03 - UTE - Desuso	Electric distribution Network	Unused
03 - UTE - FO	Fibre Optic	
03 - UTE - MA6000V	Electric distribution Network	Medium Voltage
03 - UTE - MA6300V	Electric distribution Network	Medium Voltage
03 - UTE - MA22000V	Electric distribution Network	Medium Voltage
03 - UTE - MA30000V	Electric distribution Network	Medium Voltage
03 - UTE - MA60000V	Electric distribution Network	Medium Voltage

03-UTE - 15000V	Electric distribution Network	Medium Voltage
03-UTE - RBBT400V	Electric distribution Network	Low Voltage
03-UTE - Subterraneo 150kV	Electric distribution Network	High-Voltage Undreground cable
03-UTE - Tubería Hidrocarburos	Oleoduct	
03-ute-subterraneo Paso de los Toros	Electric distribution Network	
Sub estación UTE	Electric Sub station	
04-ANCAP - Oleoducto	Oleoduct	
05-Movistar - FO	Fibre Optic	
06-Claro - FO	Fibre Optic	
08-GCDS	Gas Pipeline	
09-Conecta_90mm	Gas Pipeline	
10-MvdGas - Red	Gas Pipeline	
11-Interferencias	Interference Zone	

Image of .dwg georeferenced with different services identified



2. Interferences Identification

Multiple points of interference of the works to be executed on rail track with the different services have been detected. According to the constructive procedures, other services present in the database and not listed in this form could also offer an interference with the works.

These interferences were ordered along the track and classified by type of service and are presented below.

Station	Service	Notes	Interferences with Bridges - Bridgecode
0+700	UTE	60000 V	
	Saneamiento		
	Antel Red Canalizada		
	UTE sub	150 KV	
	MVD gas		
1+250	OSE	Tuberias	
	UTE	6000 V	
1+350	UTE	6000 V	
	Saneamiento		
	OSE		
1+580	UTE	60000 V	
	UTE sub	150 KV	
2+000	MVD gas		
	UTE sub	150 KV	
	UTE	30000 V	
		6000 V	
	GCDS		
	Saneamiento		
2+350	UTE	30000 V	B1
		6000 V	
2+410	Saneamiento		B1
2+900	UTE	30000 V	
	UTE sub	150 KV	
	Saneamiento		
	UTE	6000 V	
	Antel Red Canalizada		
3+000	MVD gas		

Station	Service	Notes	Interferences with Bridges - Bridgecode
3+350	UTE	6000 V	B4
3+620	UTE	6000 V	B5
		30000 V	
	Saneamiento		
	MVD gas		
	OSE		
3+880	UTE	6000 V	B7
		30000 V	
	OSE tuberias		
	Saneamiento		
	Antel Red Canalizada		
3+910	OSE tuberias		B7
	Saneamiento		
3+950	Saneamiento		
4+310	UTE	6000 V	B8
4+410	UTE	60000 V	
		6000 V	
		30000 V	
	Saneamiento		
	OSE tuberias		
	MVD gas		
4+490	Saneamiento		B9
4+690	Saneamiento		
	UTE	6000 V	
	MVD gas		
	OSE tuberias		
	Movistar - FO		
	Antel Red Canalizada		
4+780	Saneamiento		
	OSE tuberias		
4+890	UTE	6000 V	B11
	Saneamiento		
	OSE tuberias		
	MVD gas		
5+340	UTE	6000 V	B12
5+400	Saneamiento		B12

Station	Service	Notes	Interferences with Bridges - Bridgecode
5+900	UTE	6000 V	B13
	Movistar - FO		
	Saneamiento		
7+000	UTE	60000 V	B14
		6000 V	
	Saneamiento		
	OSE tuberias		
7+450	UTE	22000 V	B15
		6000 V	
		Subterraneo	
	Saneamiento		
	OSE tuberias		
	MVD gas		
	Antel Red Canalizada		
	UTE sub	150 KV	
7+900	MVD gas		
8+390	OSE tuberias		B16
8+830	UTE	RBBT 400V	
		6000 V	
	Saneamiento		
	OSE	Troncales	
9+300	UTE	RBBT 400V	
	ANCAP oleoducto		
	GCDS		
	MVD gas		
	OSE tuberias		
11+520	Saneamiento		B20,B21
13+180	UTE	6000 V	B23
14+100	UTE 500 kv		B24
14+800	GCDS		
15+370	OSE	Red Saneamiento	B25
17+500	OSE Troncal		
18+600-20+600	UTE	30000 V	B167, B28
		6000 V	
	Movistar - FO		
	Antel Red Canalizada		B29, B30,
	Conecta		B31, B32

Station	Service	Notes	Interferences with Bridges - Bridgecode
	OSE	Red	B33, B34 B35, B36 B37, B38
		Red Saneamiento	
		Red 200-250	
		Tuberias	
20+800	OSE	Troncales	
20+870	OSE	Tuberias	
		Troncales	
20+950	OSE	Red 200-250	
21+130	OSE	Red 200-250	B40
21+470	OSE	Red 200-250	
22+300	UTE	15.000	
22+840	Antel Red Canalizada		B41
22+930	OSE	Red	
		Tuberias	
24+080	Antel Red Canalizada		B47
	UTE	30000 V	
24+400	OSE	Red	
		Tuberias	
24+800	OSE	Red	
		Tuberias	
	Antel Red Canalizada		
	UTE	BT	
31+500	UTE	6000 V	
33+700	UTE	15000 V	B53
35+000	UTE	15000 V	
42+250	Conecta		
44+350	UTE	6000 V	B61
	OSE	Tuberias	
45+000	UTE	15000 V	
51+060	UTE	BT	B68
	OSE	Tuberias	
54+980	UTE	15000 V	B72
	Antel Red Canalizada		
55+420	UTE	3000 V	
55+560	Antel Red Canalizada		B73
56+200	UTE	15000 V	B75
58+000	UTE	1500 V	

Station	Service	Notes	Interferences with Bridges - Bridgecode
		Baja	
68+110	UTE	15000 V	B81
72+000	UTE	Catenaria 500 kV	
73+100	UTE	15000 V	
74+000	Sub estación		
74+800	UTE	15000 V	
75+700	UTE	15000 V	
88+550	UTE	15000 V	
88+650	UTE	BT	
91+000	UTE	15000 V	
100+000	UTE	15000 V	
101+220	UTE	15000 V	
106+450	OSE	Red saneamiento	B101,B168
		Tuberias	
	Antel Red Canalizada		
	UTE	30000 V	
		BT	
111+580	UTE	15000 V	
		30000 V	
125+840	UTE	15000 V	
126+600	Cell Tower		
130+410	Movistar - FO		
133+280	UTE	150 kV	
136+080	UTE	15000 V	
139+080	UTE	15000 V	
147+200	UTE	15000 V	B107
154+600	UTE	30000 V	
172+000	UTE	15000 V	
182+600	UTE	15000 V	
195+840	OSE	Red Saneamiento	B115
	Antel Red Canalizada		
	UTE	6000 V	
196+950	OSE	Tuberias	B116
	OSE	Red Saneamiento	
	Antel Red Canalizada		
197+960	Antel Red Canalizada		B117
	UTE	BT	

Station	Service	Notes	Interferences with Bridges - Bridgecode
201+750	Antel Red Canalizada		B120
	UTE	6000 V	
212+800	UTE	15000 V	B129
238+160	UTE	15000 V	B146

3. Proposed adaptation of services

The following table shows the different types of services that cross the rail track and a proposal for works to be carried out.

Layer Service	Work Proposal
01 - OSE Red	Removal and Transfer
01 - OSE Tuberías	Removal and Transfer
01 - Saneamiento	Removal and Transfer
02-ANTEL - Canalización	Removal and Transfer
02-ANTEL - Red Canalizada	Removal and Transfer (Underground)
02-ANTEL - Red Enterrada	Removal and Transfer (Underground)
03 - UTE - 150kV	Verify Vetical Clearence
03 - UTE - 500kV	Verify Vetical Clearence
03 - UTE - 500kV Futura	
03 - UTE - Desuso	
03 - UTE - FO	
03 - UTE - MA6000V	Removal and Transfer (Underground) or Verify vertical clearence
03 - UTE - MA6300V	
03 - UTE - MA22000V	
03 - UTE - MA30000V	Removal and Transfer (Underground) or Verify vertical clearence
03 - UTE - MA60000V	Removal and Transfer (Underground) or Verify vertical clearence
03-UTE - 15000V	Removal and Transfer (Underground) or Verify vertical clearence
03-UTE - RBBT400V	Removal and Transfer (Underground) or Verify vertical clearence
03-UTE - Subterraneo 150kV	
03-UTE - Tubería Hidrocarburos	
03-ute-subterraneo Paso de los Toros	
Sub estación UTE	Verify safety Zone
04-ANCAP - Oleoducto	Verify minimum distance - Protection of concrete slab
05-Movistar - FO	
06-Claro - FO	
08-GCDS	Verify minimum distance - Protection of concrete slab
09-Conecta_90mm	Verify minimum distance - Protection of concrete slab
10-MvdGas - Red	Verify minimum distance - Protection of concrete slab