

**NOKIA**

# GSM-R Network Implementation RFI Italy project

- Antonino Sciarilli, NOKIA
- Bologna, 9-5-2018

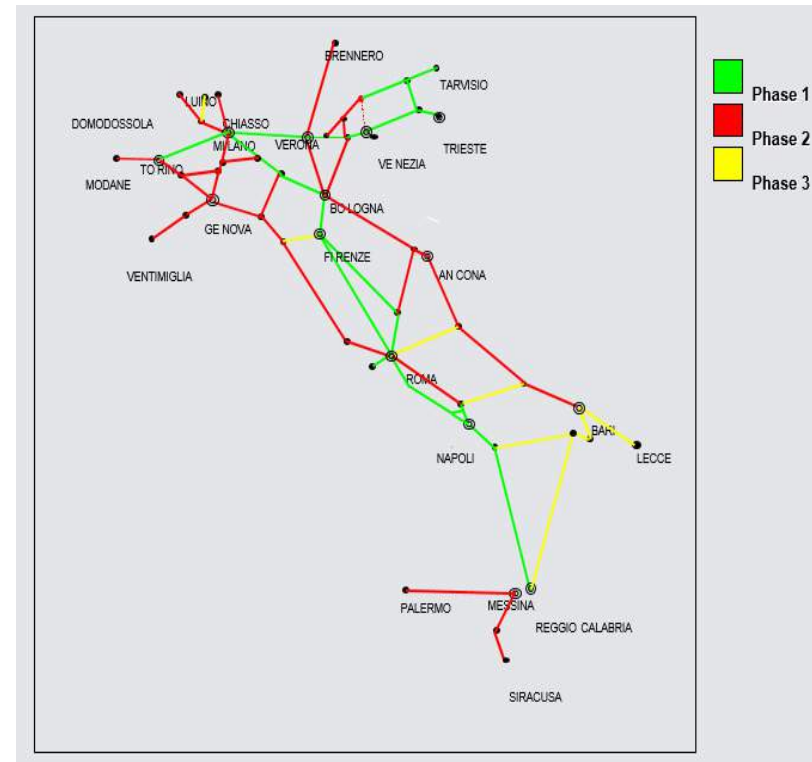
## GSM-R Network Implementation

### Agenda

- RFI GSM-R Network – The history
- GSM-R Sites
- Implementation Milestone
- Project Organization

## RFI GSM-R network - The history (1/4)

- ❑ In 2002 RFI GSM-R Network implementation started ( Base Contract 62\_2002 ).
- ❑ The deployment of network coverage included RFI main railway lines for about 7.500 Km out of 16.000 Km which is the whole extension of RFI railway network.
- ❑ Realisation on a full “turn-key” base
- ❑ Projetc’s Milestones
  - Phase 1 ( completion of Core Network, activation of 2 NSS Milano/Roma and GSM-R Network coverage over 2400 Km )
  - Phase 2 ( implementation of GSM-R Network over 3200 Km more and GPRS )
  - Phase 3 ( implementation of remaining GSM-R Network over 2000 Km more )

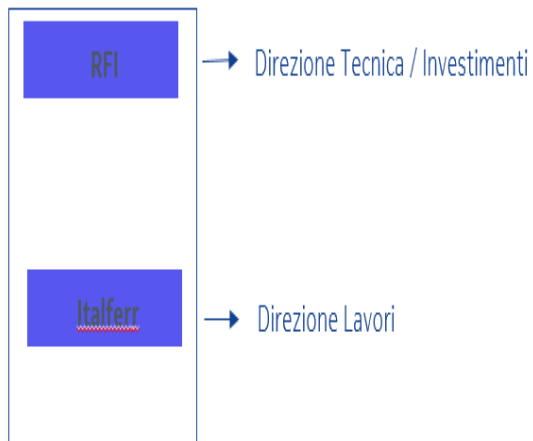


# RFI GSM-R network - The history (2/4)

- Annex ( AIM ) at Base Contract (From Phase 4 to Phase 8 )
- End of Base Contract 62\_2002 in 2012 ( after 10 years )

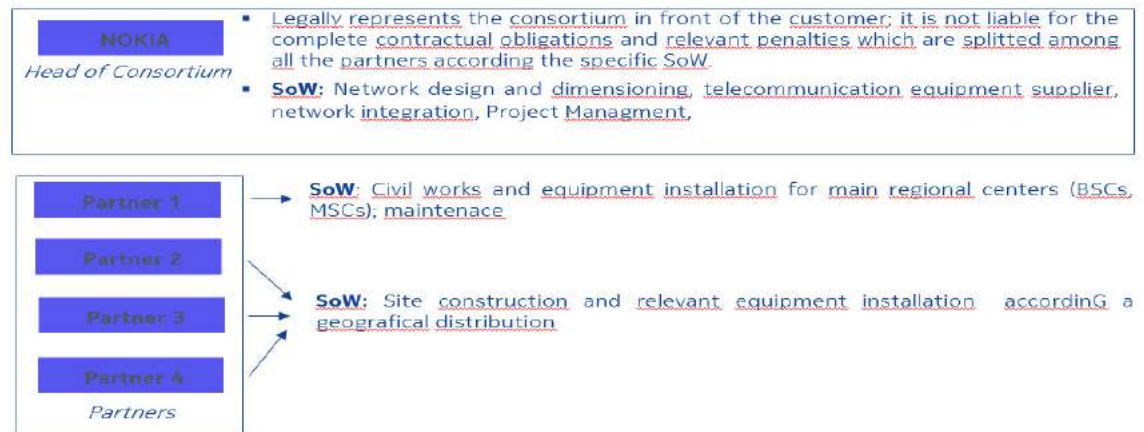
## GESTIONE CONTRATTO

### COMMITTENZA



### APPALTATORE

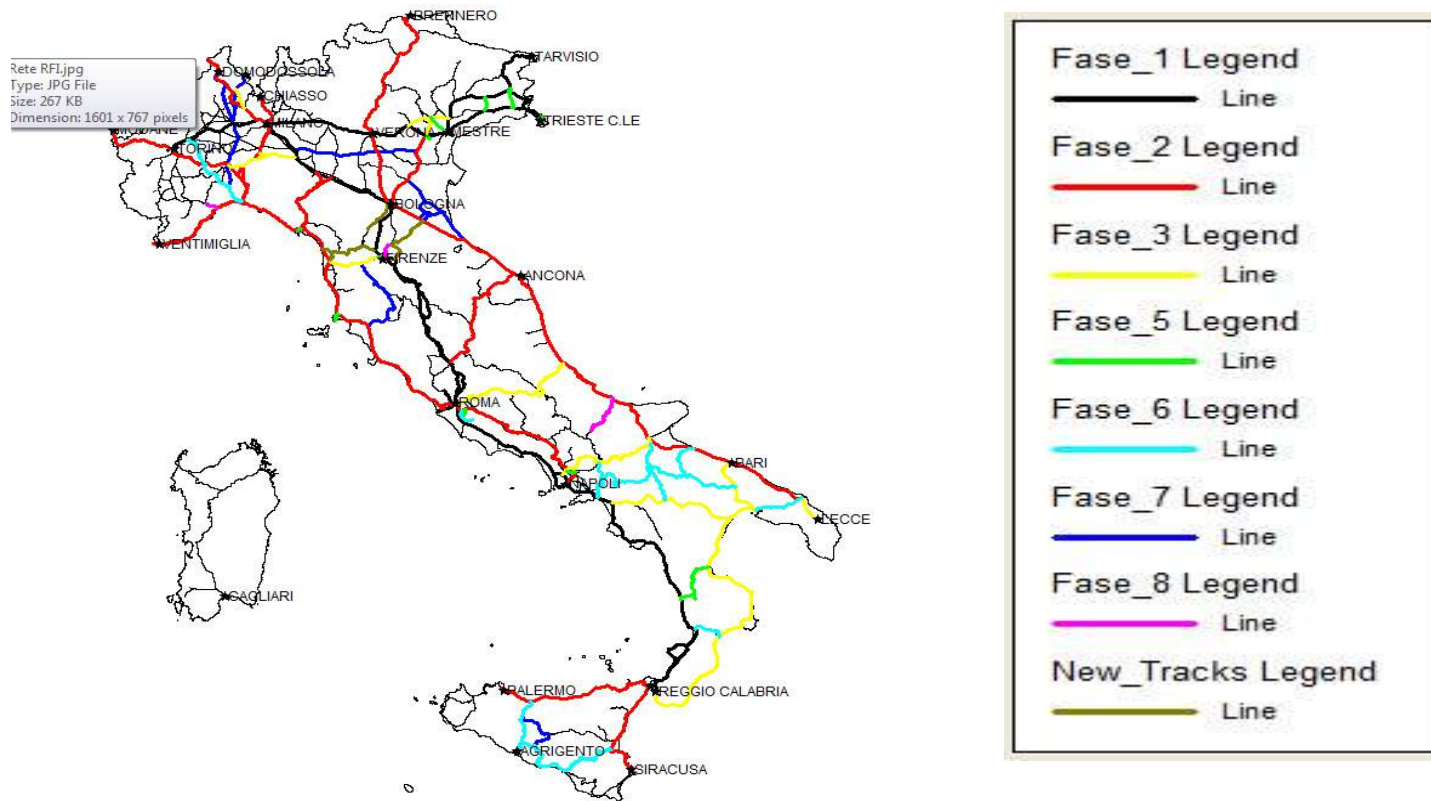
#### Consortium: members



## RFI GSM-R network - The history (3/4)

- ❑ After more than 10 years of Siemens technologies deployment, according with a TLC sector asking for more features and performances, our Company started with a progressive network renovation and modernization, according to a general master plan shared with the Customer.
- ❑ New Tracks after Base Contract & HSL
- ❑ According to this modernization plan, our Company started to deliver new Nokia systems on all TLC environment: IP, Core, Radio Access, etc.
- ❑ The actual main NI project consist of BSC systems modernization, by Nokia FlexiBSC implementation and overall Radio Acces network migration (“BTS Rehoming”).

## RFI GSM-R network - The history (4/4)



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# GSM-R Sites (1/6)

## GSM – R Site Equipment

- BTS ( SRB )
- ADM ( Transport Networks )
- SE ( Power System )
- Switch IP ( IP Network )
- SPVA
- Antenna & Feeder
- Cable



## Other

- Shelter
- Room
- pole
- Conditioners





## GSM-R Sites (2/6)

### Main Standard GSM-R Sites

Type	room	shelter	Pole	Note	Count of site ID
A	existing		existing		244
B	existing		new		340
C		new	existing		154
D		new	new		766

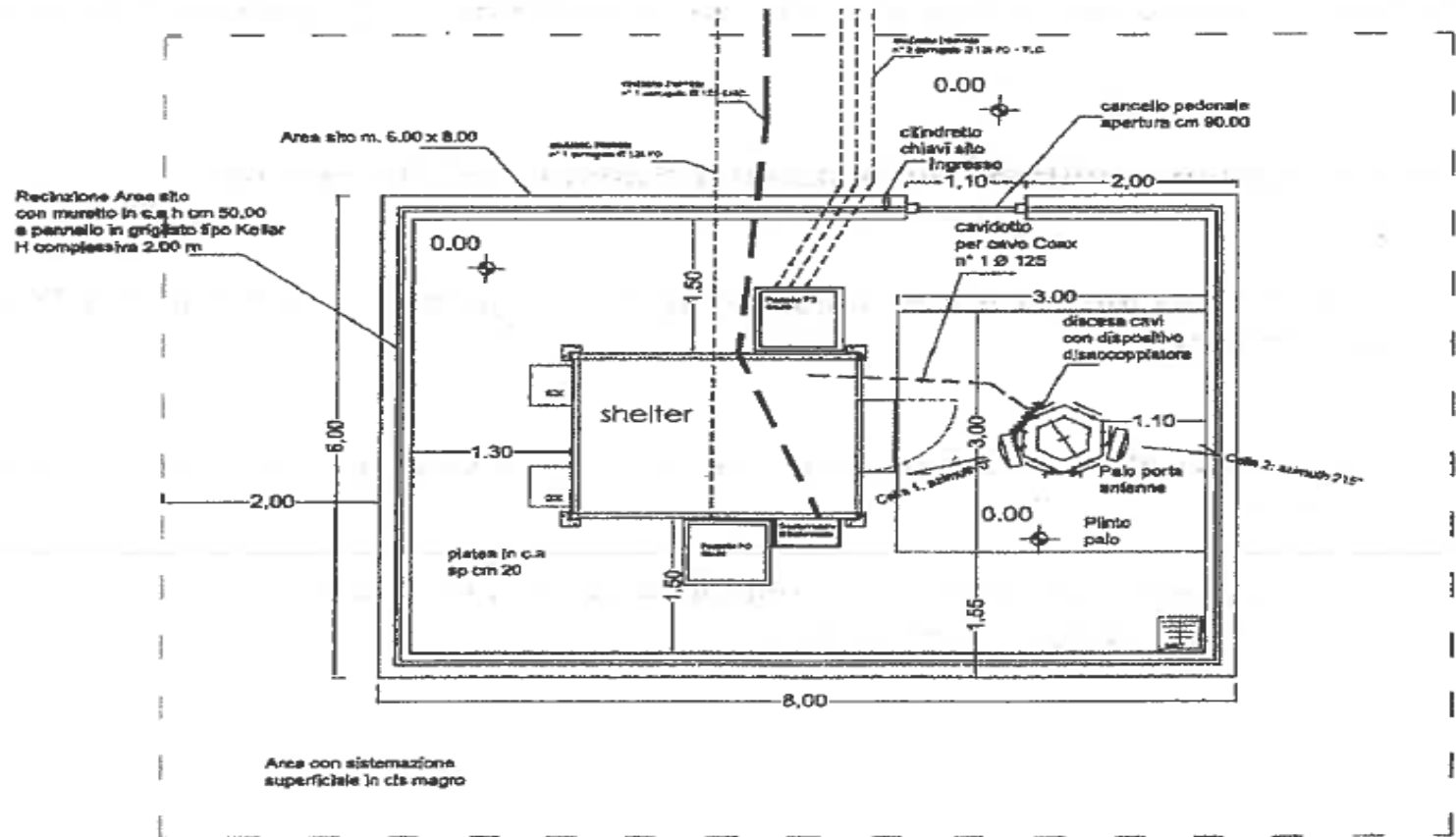
A1		existing	existing	CRG	89
B1		existing	new	CRG	17
E				Cabinet Outdoor for CRG	20

Total GSM-R Sites ( Conventional Line )	1630
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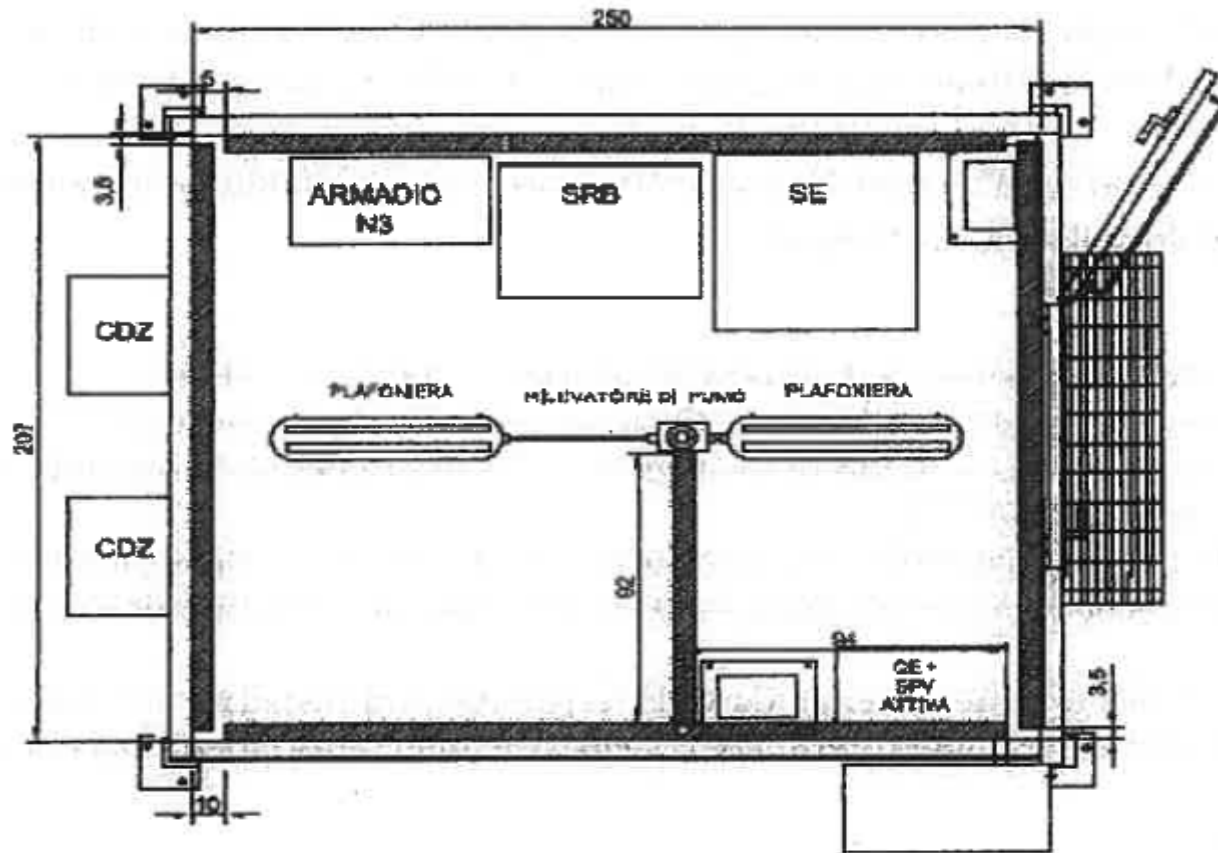
Total Sites ( Higt Speed Line )	174
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Total GSM-R Sites	1804
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# GSM-R Sites (3/6)



# GSM-R Sites (4/6)



## GSM-R Sites (5/6)



## GSM-R Sites (6/6)

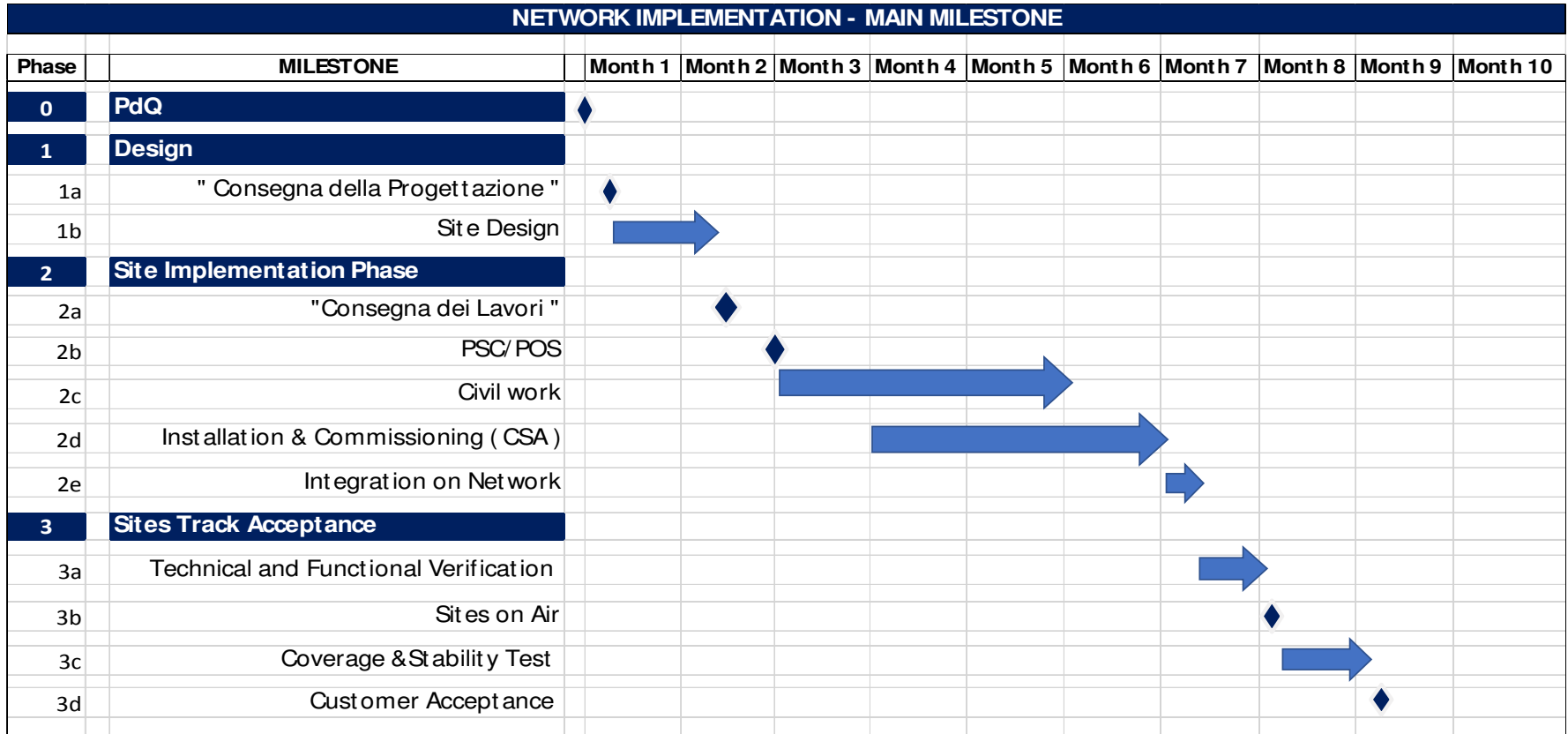


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# Implementation Milestone ( 1/1 )



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## Project Organization ( 1/4 )

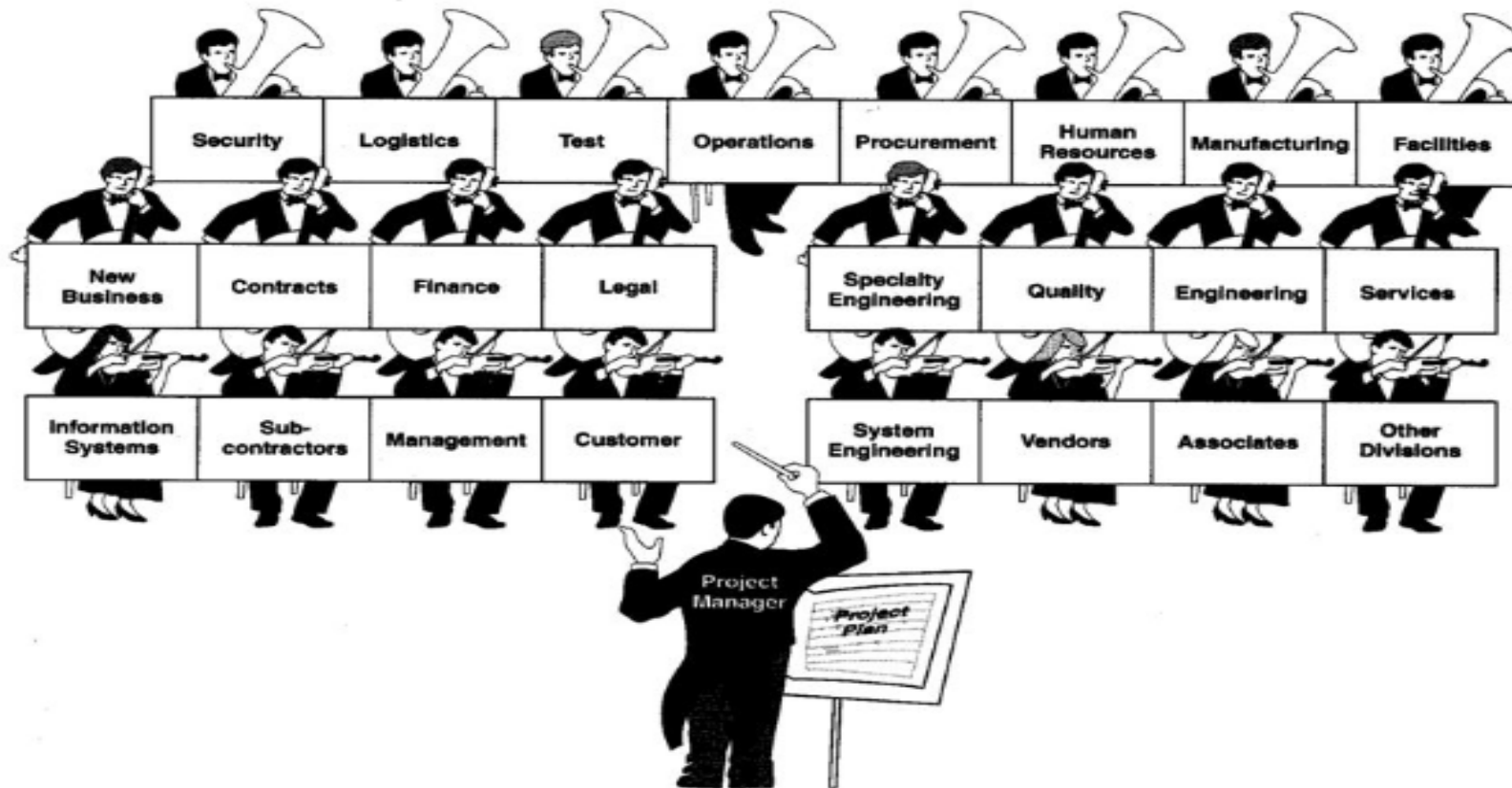


I... NEED...  
HEEEEEEEEEELLLP!

## Project Organization ( 2/4 )



# Project Organization ( 3/4 )



## Project Organization ( 4/4 )



# Health & safety



**NOKIA** Life Saving Rules

**ROAD SAFETY**

**WORK AT HEIGHT**

**ELECTRICAL**

These six rules are the minimum standards we all follow so we get home safe

We look out for each other and step in if others fail to follow the rules

**FOLLOW THEM - OR STOP WORK AND SPEAK UP**

The poster features a heart-shaped graphic divided into three horizontal sections. The top section is labeled 'ROAD SAFETY' and contains three icons: a seatbelt, a person driving, and a speedometer. The middle section is labeled 'WORK AT HEIGHT' and contains two icons: a safety harness and a ladder. The bottom section is labeled 'ELECTRICAL' and contains one icon: a person using a tool on a panel. The background of the heart is a dark, reflective surface showing the feet of people walking.

