

# **Project of a Mobile Communications' Base Station in a City near the Spanish Border**

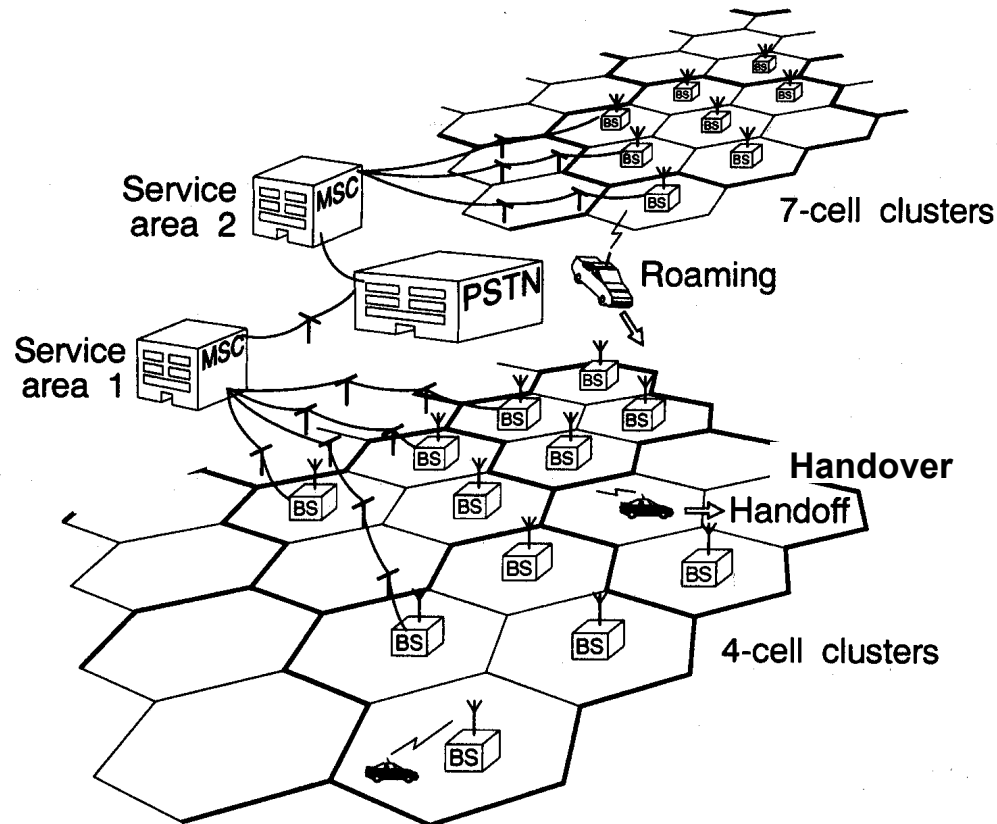
Luis M. Correia

# Outline

- Introduction to Mobile Communication Systems
- Project Description.
- Conclusions.

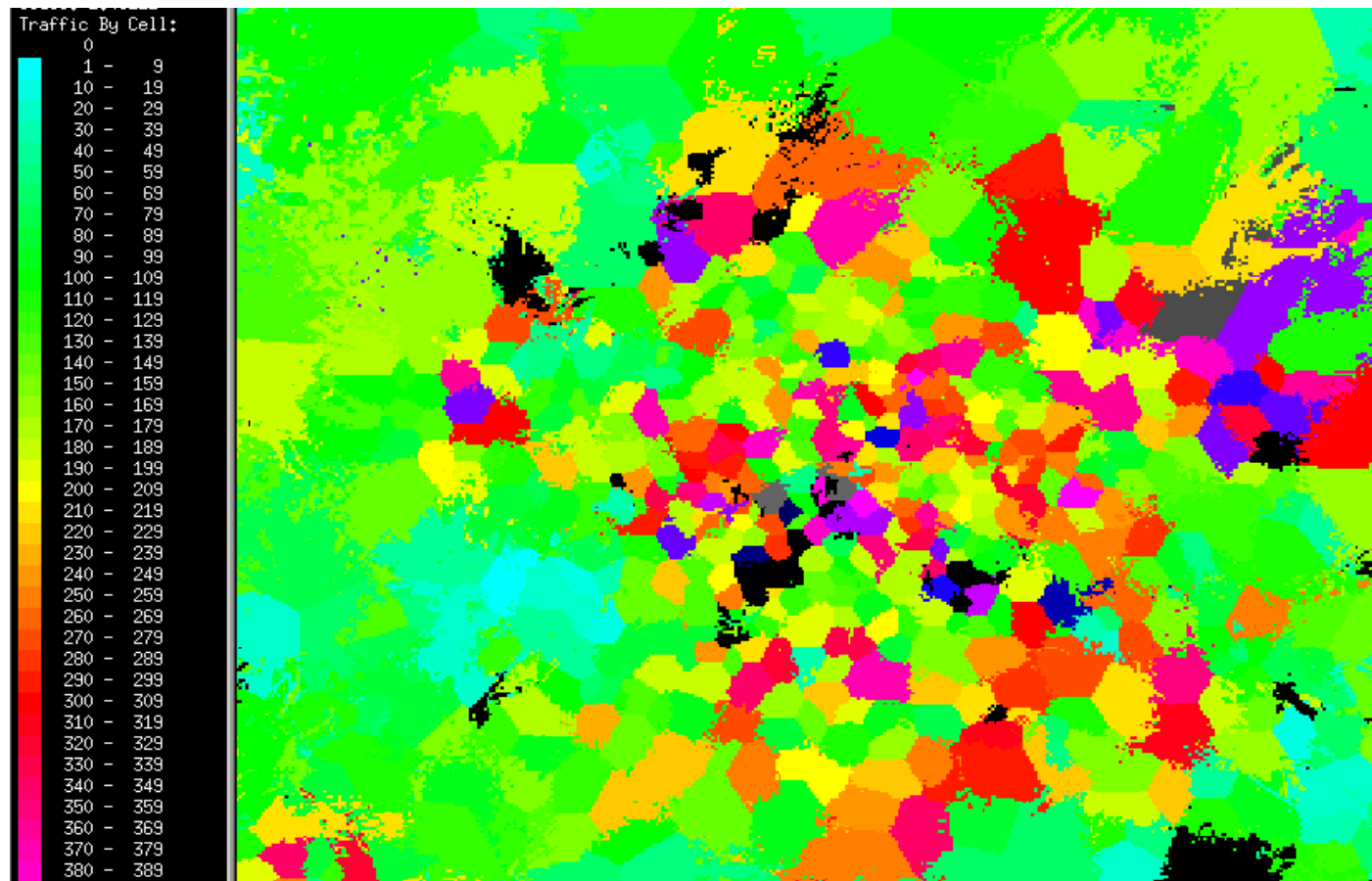
# Cellular System Architecture

- In ideal conditions, cells' distribution is uniform, with frequencies grouped into clusters.

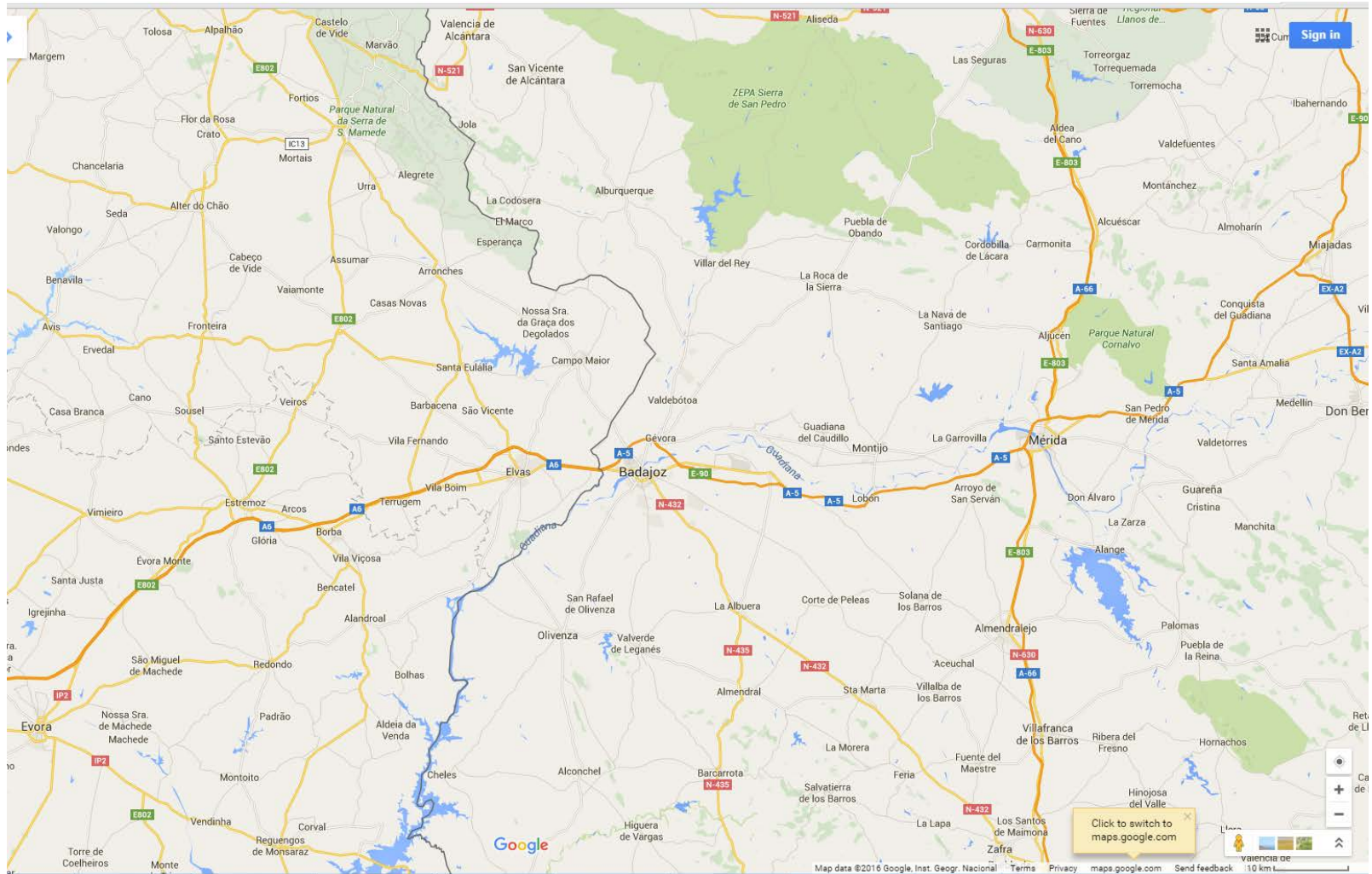


# Cellular Planning

- In real conditions, the cells distribution is not uniform.



# Cross-Border Frequency Planning



# Project Roles (1)

- Internal Departments
  - **Project Development - Leader**
  - Radio Engineering Rad.Eng. D.
  - Regulation Reg. D.
  - Management Manag. D.
  - Law Law D.
  - Buying Buying D.
  - Marketing Market. D.

## Project Roles (2)

- Contracted External Entities

- Constructor Const.

- Electric energy supplier Elec.En. S.

- Premises owner Owner

- Negotiator Negotiator

- Fixed link supplier Fix. Link S.

- Equipment suppliers Equip. S.

## Project Roles (3)

- Non-Contracted External Entities

- ANACOM (for information)

ANACOM

- Municipality (for authorisation)

Municip.

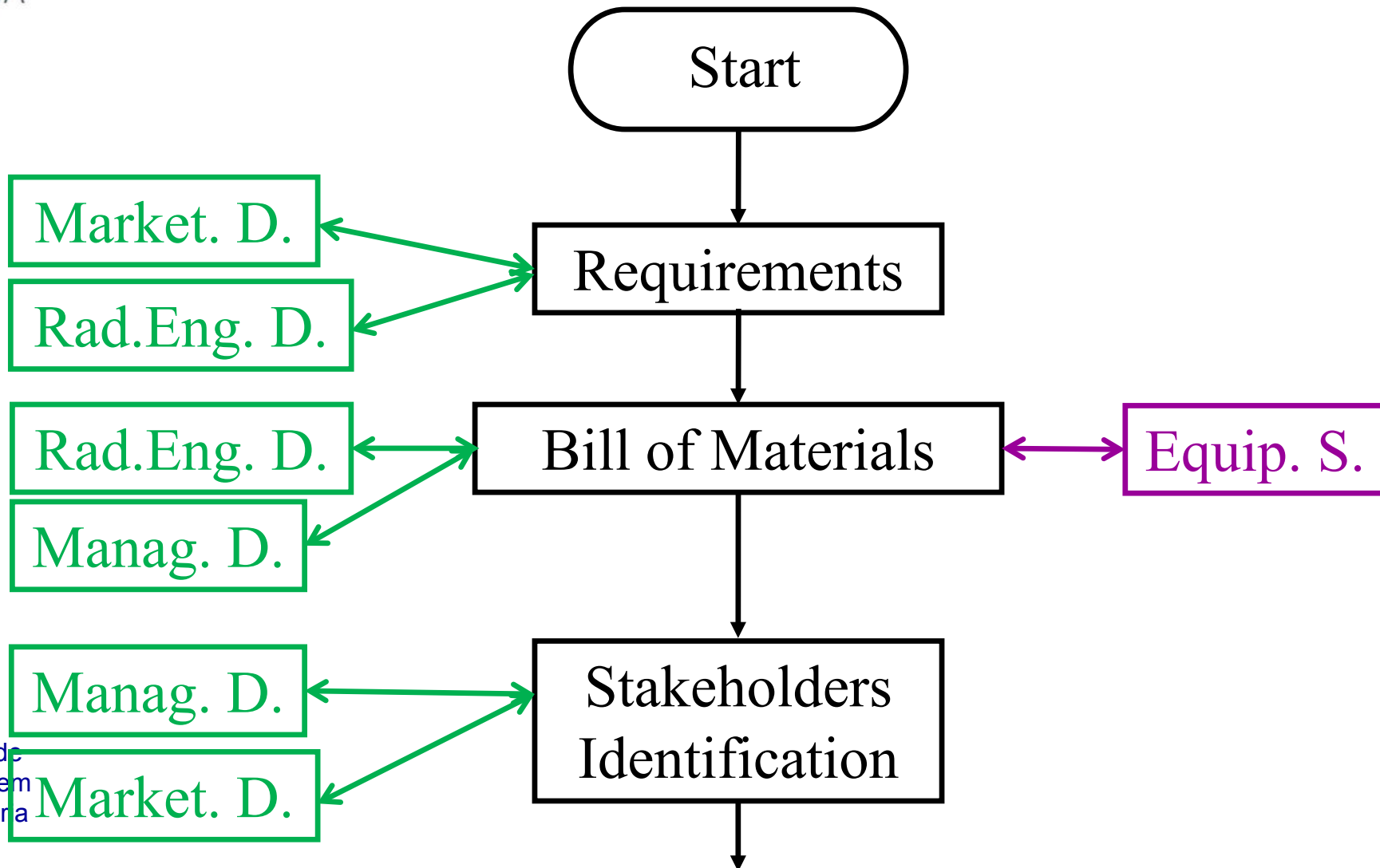
- Spanish Operators

Span. Ops.

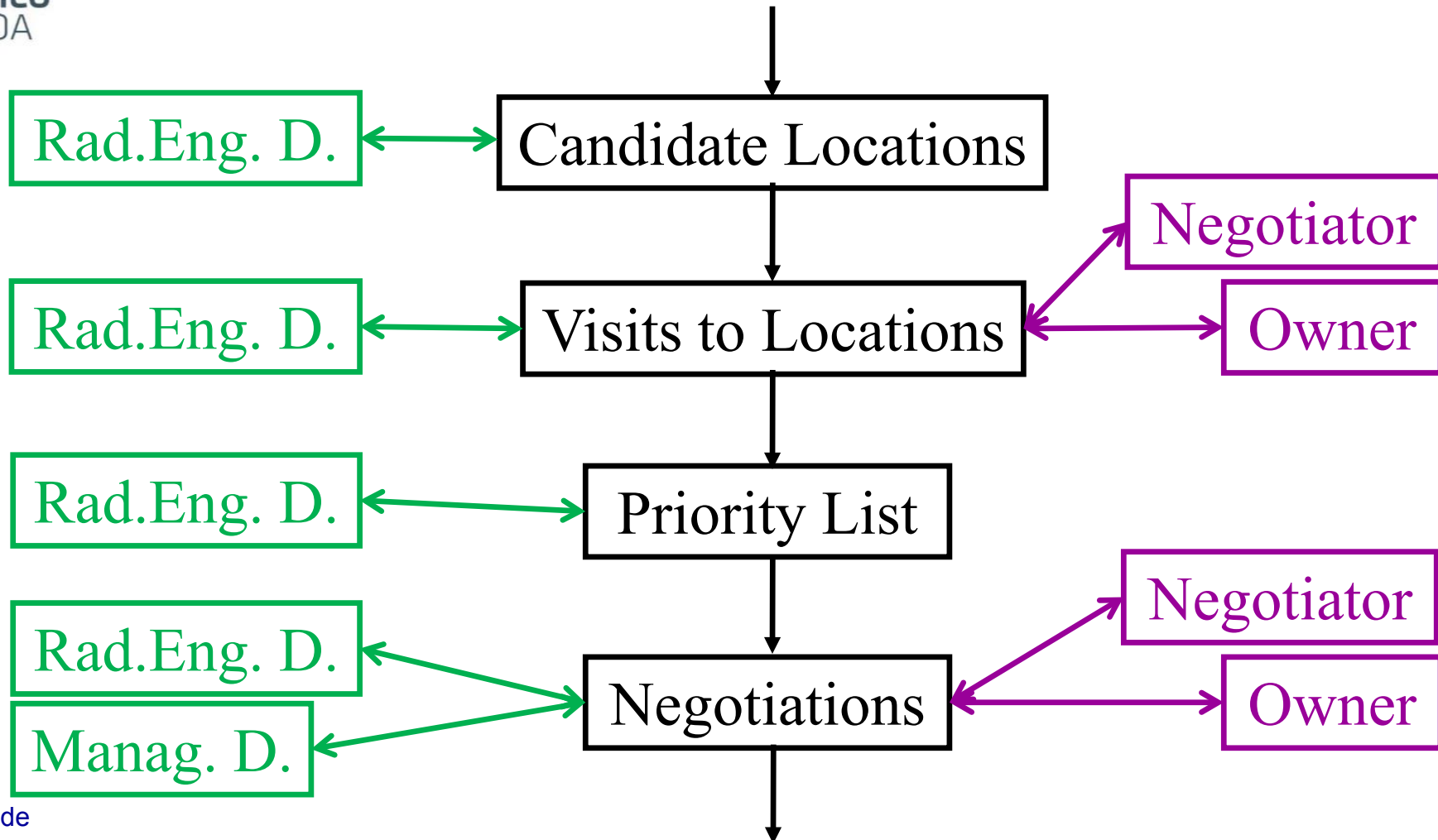
- Other stakeholders ...



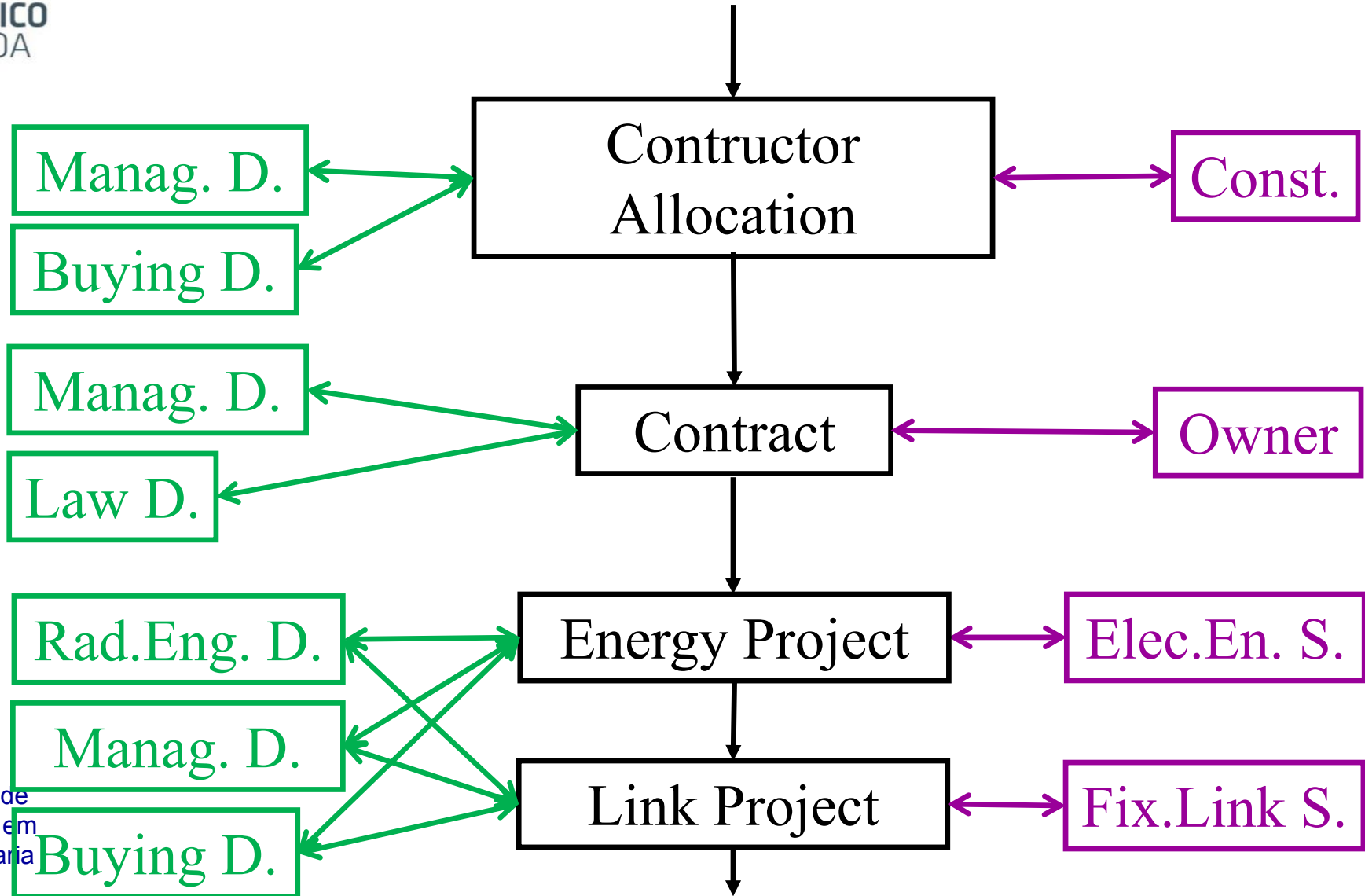
# Project Development (1)



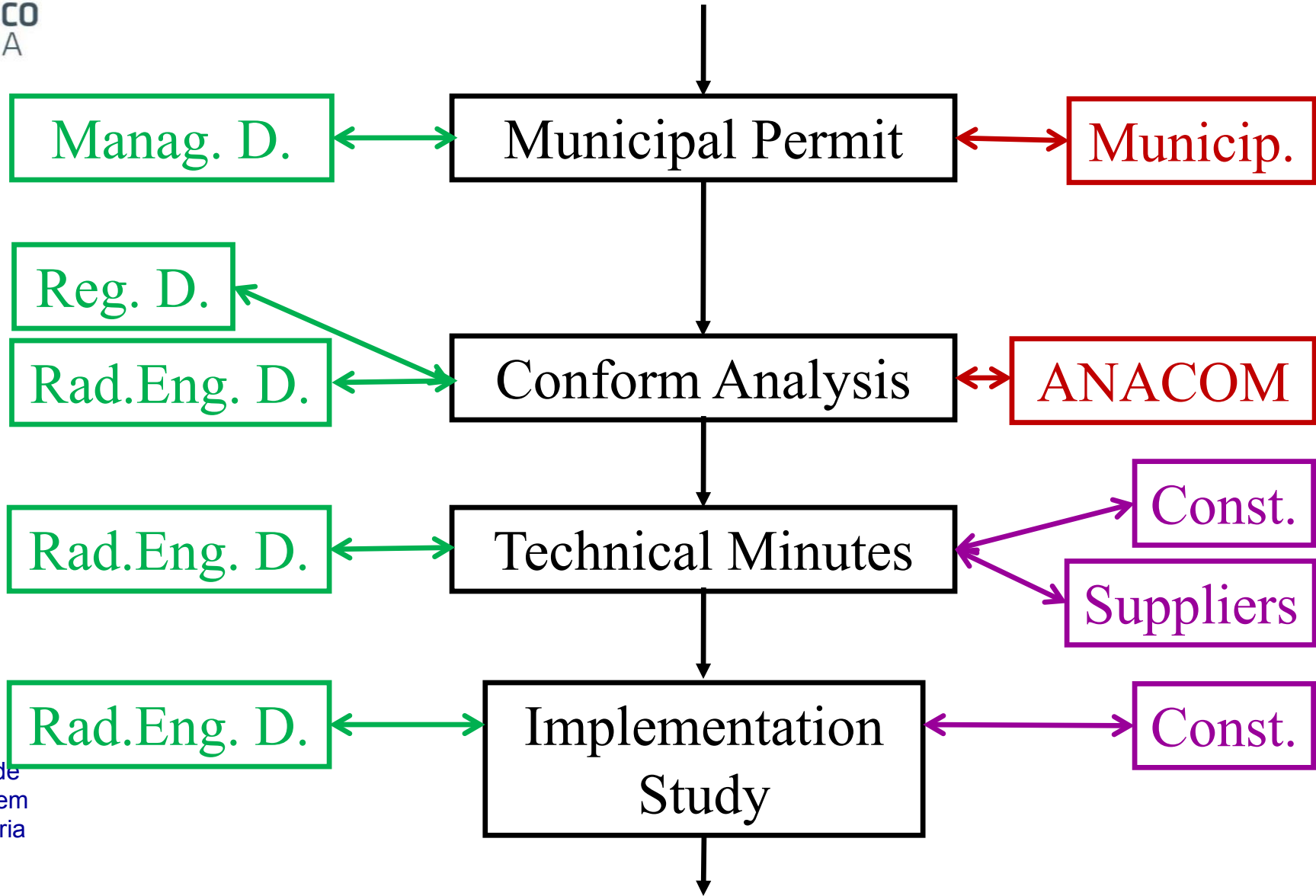
## Project Development (2)



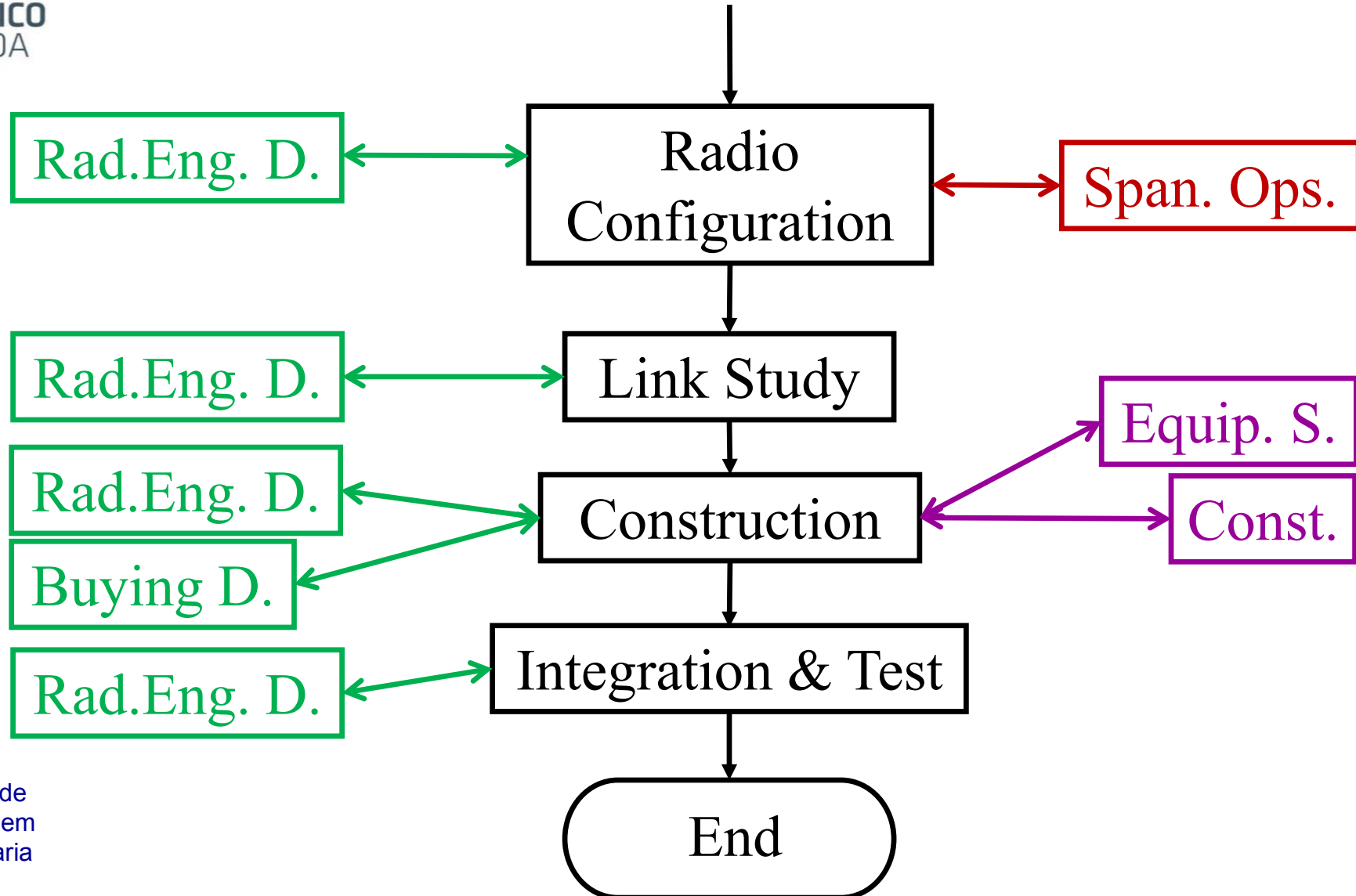
# Project Development (3)



## Project Development (4)



# Project Development (5)



# Conclusions

- The project of installation of a mobile communications base station:
  - can be originated from several ways;
  - is multi-disciplinary;
  - involves many stakeholders;
  - involves internal departments, as well as external entities;
  - has many variables that are not controlled by the company;
  - has a very variable schedule.