Project

Carlo Ghezzi

Politecnico Milano
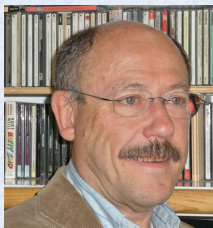
Jeff Kramer

Imperial College London

Bashar Nuseibeh

Open University
LERO Ireland

… the workshop challenge …

All complex socio-technical software systems
are embedded in the world

and

must therefore take into account various
digital humanism values and issues.

… the workshop challenge …

How?

By drawing on your multiple perspectives and embracing an interdisciplinary approach …

to consider a spectrum of human and technical issues that account for political, economic, environmental, and social values and concerns.

… the project challenge …

The main aim of the project sessions is to encourage you to engage with the challenges of

eliciting,
articulating,
and organising

the various digital humanism issues that are presented in the workshop,
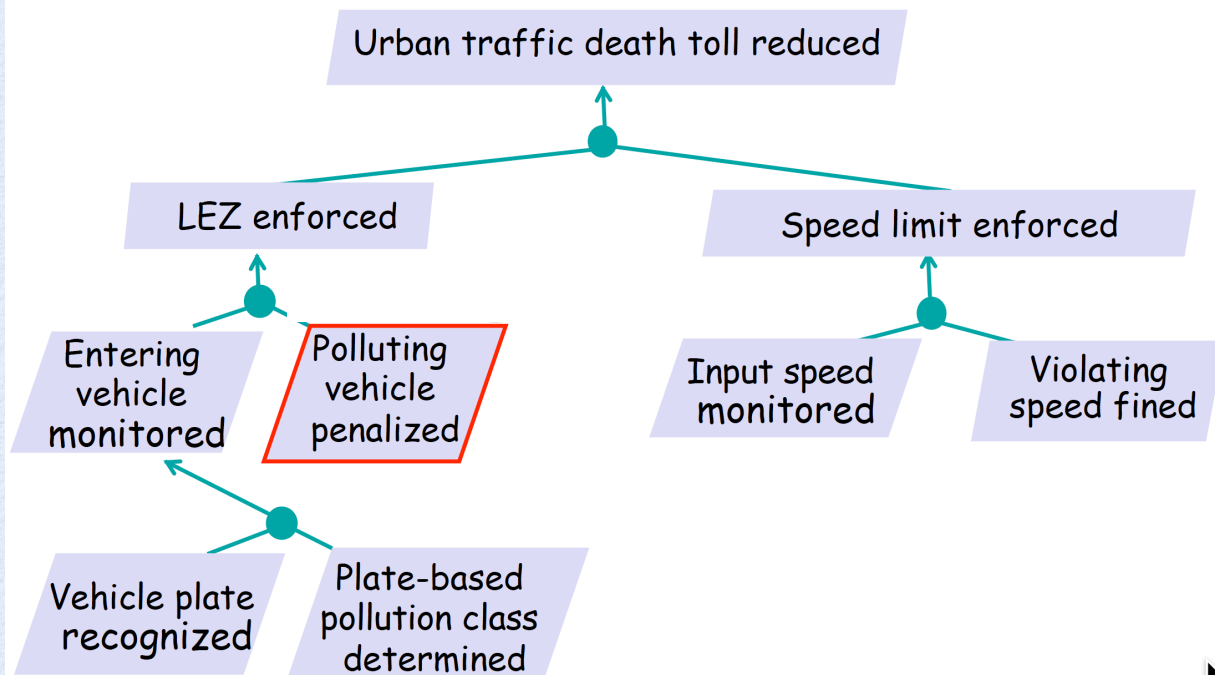
as system goals.

Goals ?

Goals *can be used to justify and describe the requirements that a system is expected to*

achieve,
avoid,
maintain
or
satisfy to some acceptable degree.

Goal hierarchy

Low Emission Zones (LEZ):   high-level goals

Urban traffic death toll reduced

LEZ enforced

Speed limit enforced

Entering vehicle monitored

Polluting vehicle penalized

Input speed monitored

Violating speed fined

Vehicle plate recognized

Plate-based pollution class determined

Hard and Soft Goals

Soft goals achievement cannot be established in a clear cut sense.
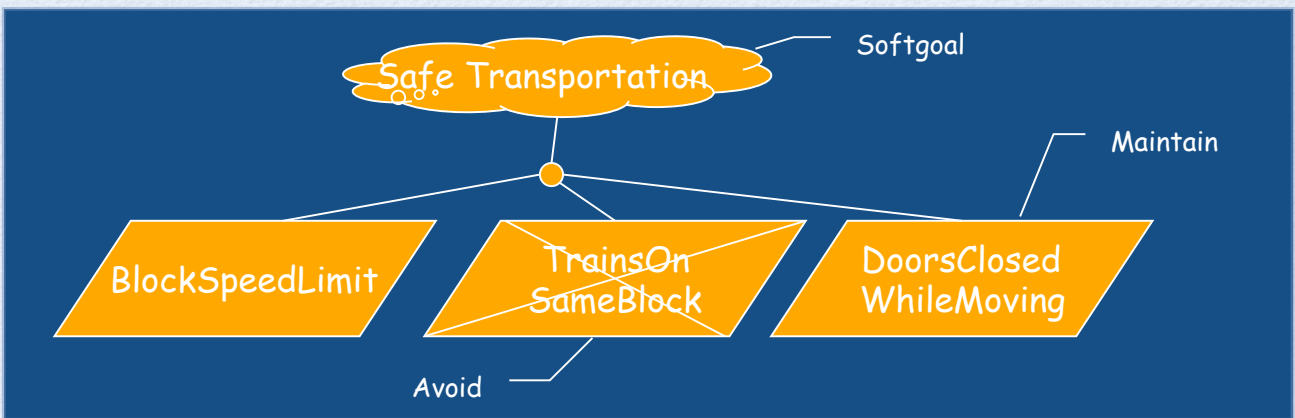 Goal satisficing
  Qualitative reasoning
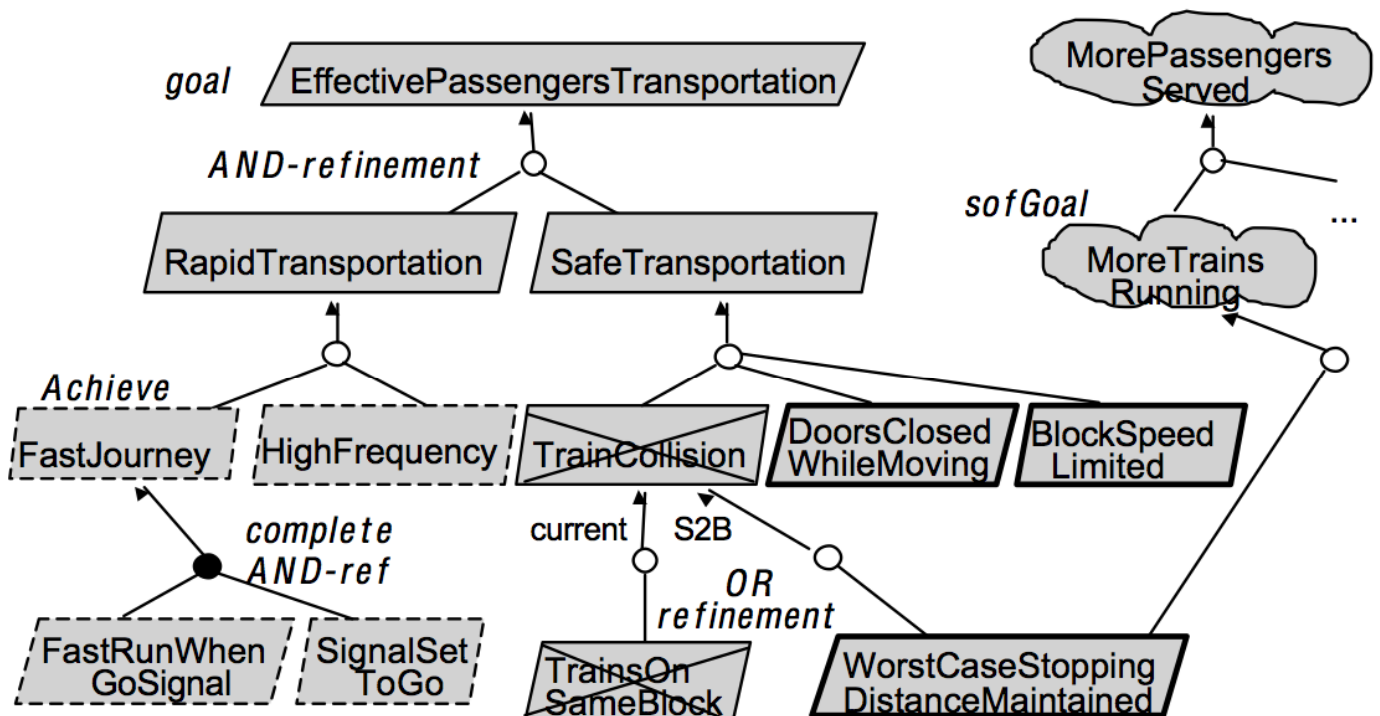**Hard goals** (achieve/maintain) can be verified
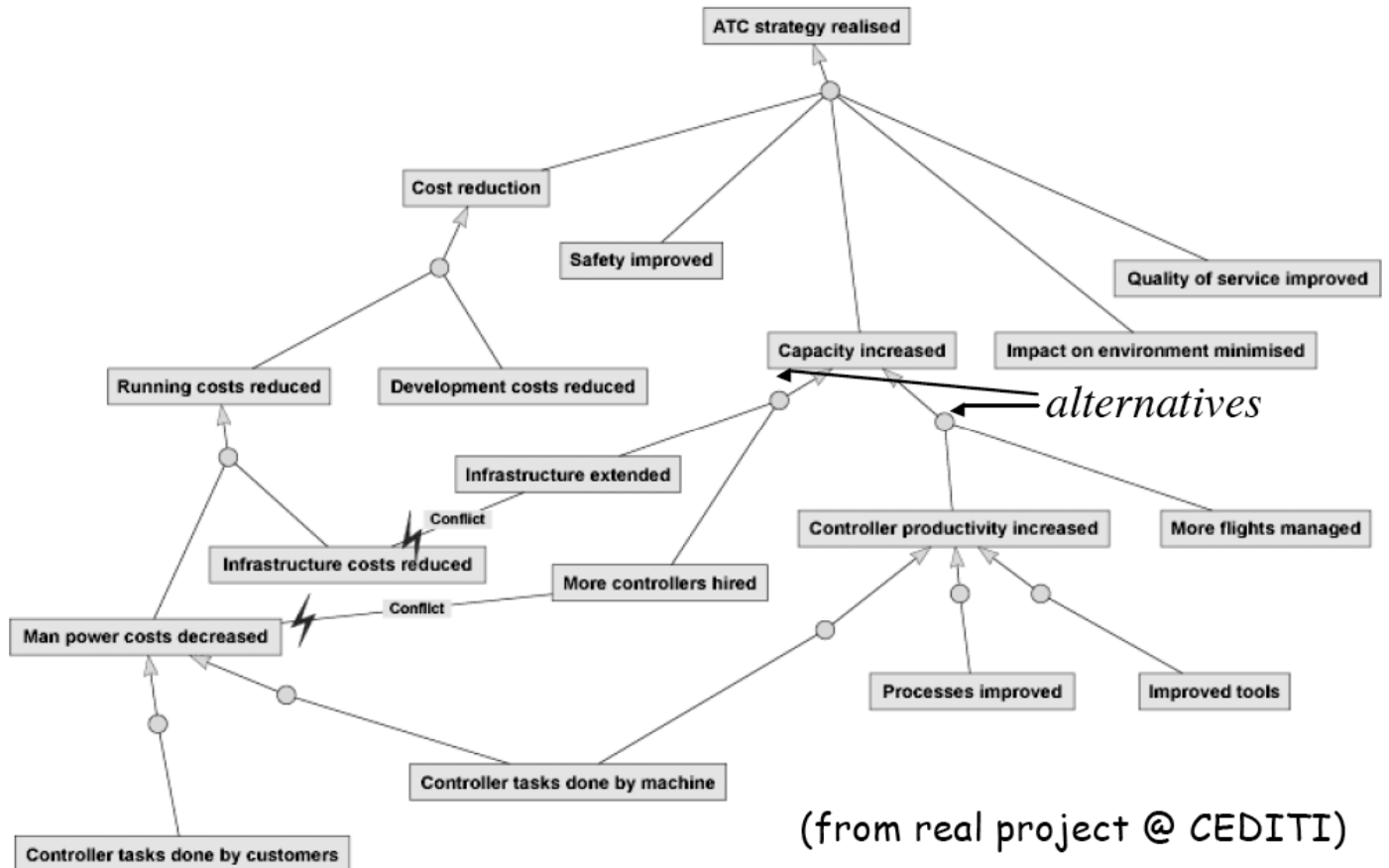 Goal satisfaction
  Formal reasoning (possibly quantitative)
Relation to Functional/Non-functional

Goal reginement: AND, OR

Goals - conflicts

ATC strategy realised

Cost reduction

Safety improved

Quality of service improved

Capacity increased

Impact on environment minimised

alternatives

Running costs reduced

Development costs reduced

Infrastructure extended

Conflict

Infrastructure costs reduced

Controller productivity increased

More flights managed

More controllers hired

Conflict

Man power costs decreased

Processes improved

Improved tools

Controller tasks done by machine

Controller tasks done by customers

(from real project @ CEDITI)

… the project challenge …

Participants might also elaborate on the features that systems should support to achieve or maintain their goals,

and consider

how it would be possible to ascertain whether an existing system is compliant with what was initially expected.

… the project challenge : summary…

Experiment with the value of putting together students with different backgrounds (not just computing) in articulating the DigHum goals and overall requirements to be reached by a hypothetical socio-technical system, understanding potential conflicts and mitigating potential risks. In doing so, reflect on what the lectures teach you about DigHUM values.

Hypothesis is that we need inputs and insights that are not purely technical, but also cover social/political/anthropological aspects in the conception phase, to anticipate how systems can be used/misused. Consideration on what should be automated and what should be left to humans is part of the discussion.

… Monday Discussion …

- *Why do we engage you in a project?*

- *How is the project related to the other topics ?*

- *How is the project activity structured?*

- *Some tools to organize your work.*

- *Interdisciplinary group formation*

- *Sessions:*
  1. Monday
  2. Thursday
  3. Friday