



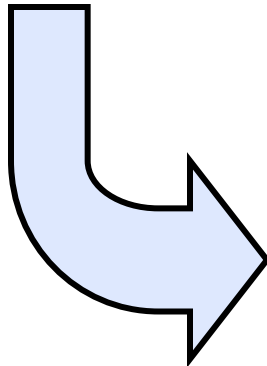
Requirements Engineering (Summer 2019)

Prof. Nan Niu (nan.niu@uc.edu)

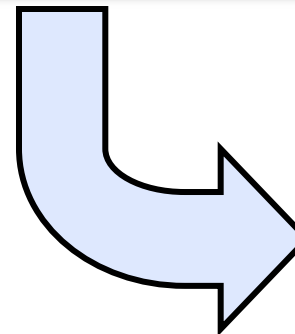
<http://homepages.uc.edu/~niunn/courses>

Today's Menu

Last Seminar:
Req.s Elicitation



This Seminar:
Goal Modeling
Assignment 1



Next Seminar:
Visual Modeling
Notations



Assignment 1

→ Dataset available on the course website

↳ <http://homepages.uc.edu/~niunn/courses/>

→ Objectives

↳ Use the given set of functional requirements (FRs) to build an i^* model

↳ Use your i^* model to make the FRs more complete by following softgoal-based tradeoff analysis

→ Due: before 8:30am on Friday (July 12)



Assignment 1 (Cont'd)

→ Schedule of Wednesday (July 10)

↪ 9:20-10:00: *i** lecturing

↪ 10:00-10:30: students working on their ASN1 (*i** modeling part) and the instructor doing Q&A

↪ 10:30-11:00: softgoal analysis lecturing

↪ 11:00-11:30: students working on their ASN1 (*i** modeling and softgoal-based tradeoff analysis) and the instructor doing Q&A

→ Thursday (July 11)

↪ 8:30-9:50: ASN1 Q&A

↪ 10:00-10:40: Visual modeling notations (class participation)

↪ 10:40-11:30: ASN1 Q&A



Year	Category of Paper	Authors	Title of Paper
2007		Eric Yu	Towards Modelling and Reasoning Support for Early-Phase Requirements Engineering



i*

Two views (SD & SR)

Five nodes (actors, goals, softgoals, tasks, resources)

Three edges (dependency, decomposition, softgoal contribution)

Practical Impacts of i^*

→ International standard

↳ User Requirements Notation (URN)

- Goal Requirements Language (GRL) www.itu.int/rec/T-REC-Z.151/en

↳ Initiated from the telecom industry

↳ ITU-T Recommendation Z.151



→ Real-world applications

↳ Air traffic control

- N. Maiden *et al.* “Model-Driven Requirements Engineering: Synchronising Models in an Air Traffic Management Case Stud”, CAiSE, 2004.

↳ Food safety

- A. Perini and A. Susi. “Designing a Decision Support System for Integrated Production in Agriculture: An Agent-Oriented Approach”, Environmental Modelling and Software Journal, 19(9), September 2004.

↳ Hospital wards

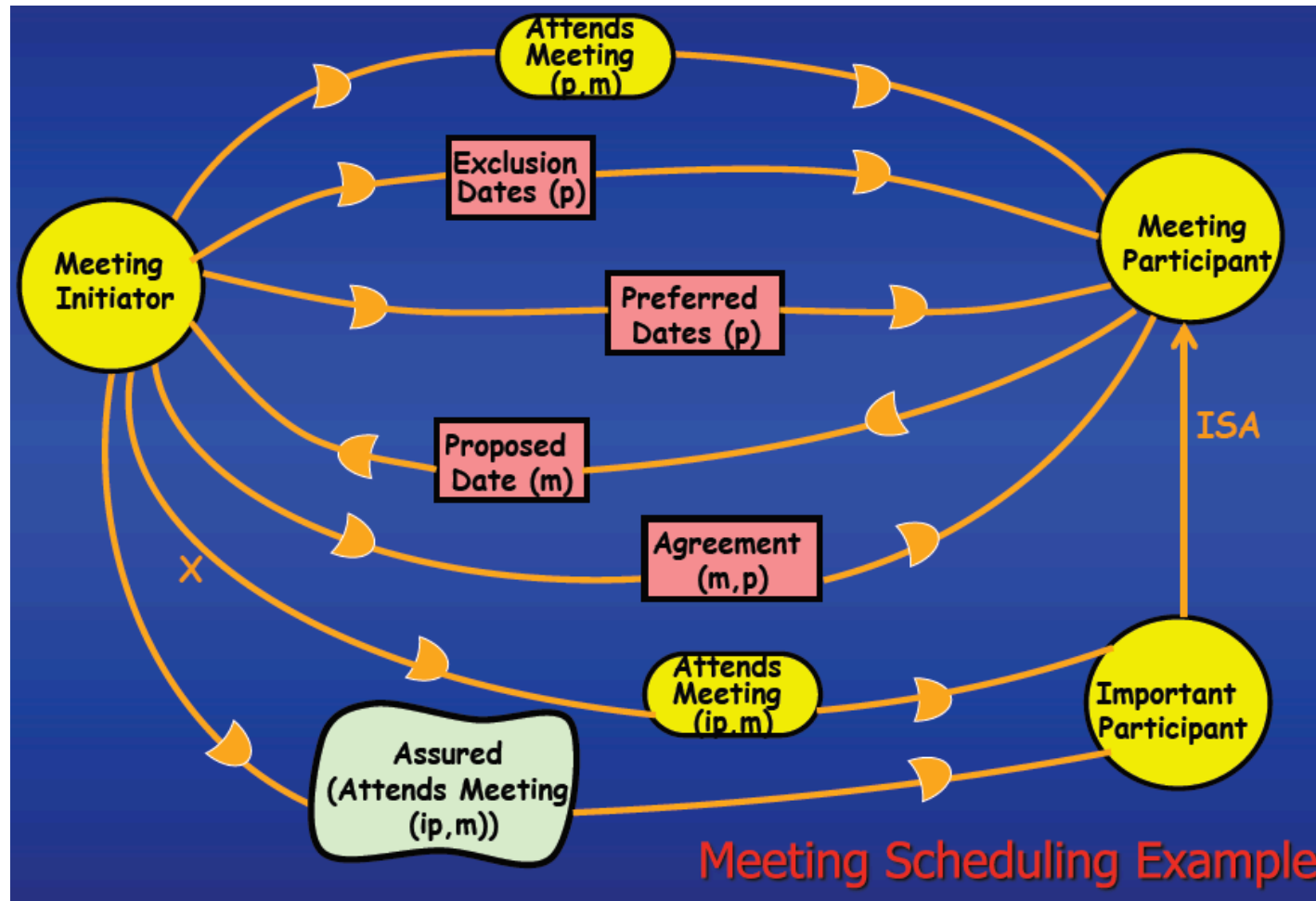
- S. Kethers *et al.* “Modelling Trust Relationships In A Healthcare Network: Experiences With The TCD Framework”, ECIS 2005.



Air Traffic Control



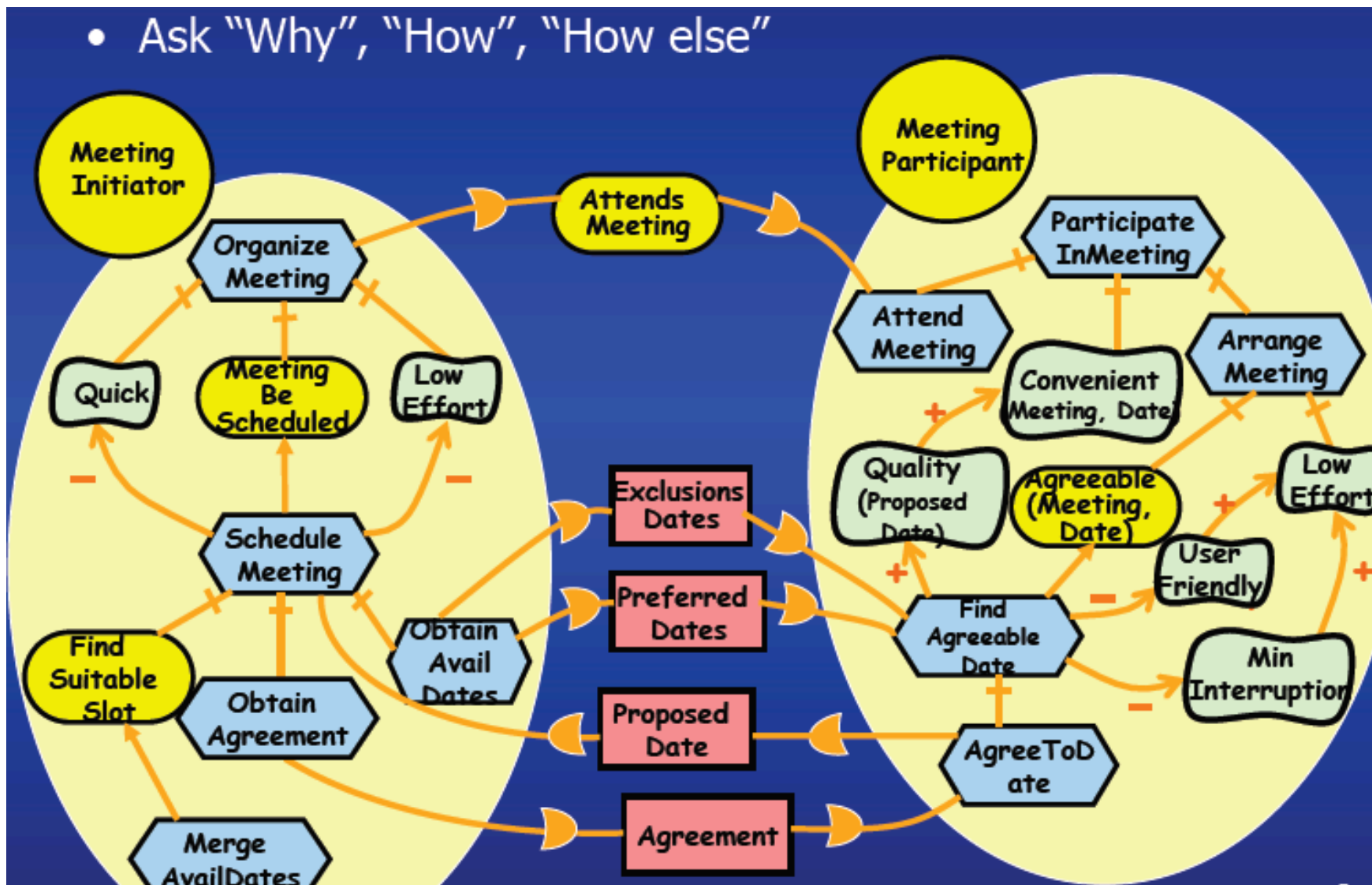
Strategic Dependency (SD)





Strategic Rationale (SR)

- Ask "Why", "How", "How else"





Class Exercise - i^* Modeling

→ Let's model our summer course

↪ Who're the key stakeholders/actors?

↪ How're they depended on each other?

↪ What're their goals?

↪ How to decompose the goals?

↪ What're the means and/or alternatives to achieve the goals?

↪ Are there any softgoals?

↪ How're the softgoals supported or hindered?

↪ Does software-intensive system play any role here?

→ Let me do SD with you first followed by SR



Goal Analysis

→ Goal Elaboration:

- ↳ “Why” questions explore higher goals (context)
- ↳ “How” questions explore lower goals (operations)
- ↳ “How else” questions explore alternatives

→ Relationships between goals:

- ↳ One goal **helps** achieve another (+)
- ↳ One goal **hurts** achievement of another (-)
- ↳ One goal **makes** another (++)
 - Achievement of one goal guarantees achievement of another
- ↳ One goal **breaks** another (--)
 - Achievement of one goal prevents achievement of another
- ↳ Precedence ordering (must achieve goals in a certain order)

→ Obstacle Analysis:

- ↳ Can this goal be obstructed, if so how?
- ↳ What are the consequences of obstructing it?

Softgoals as Selection Criteria



What're (high-level) softgoals of BART?



Softgoals as Selection Criteria

