

# Corso di Interazione Uomo-Macchina I

**Paolo Bottoni**

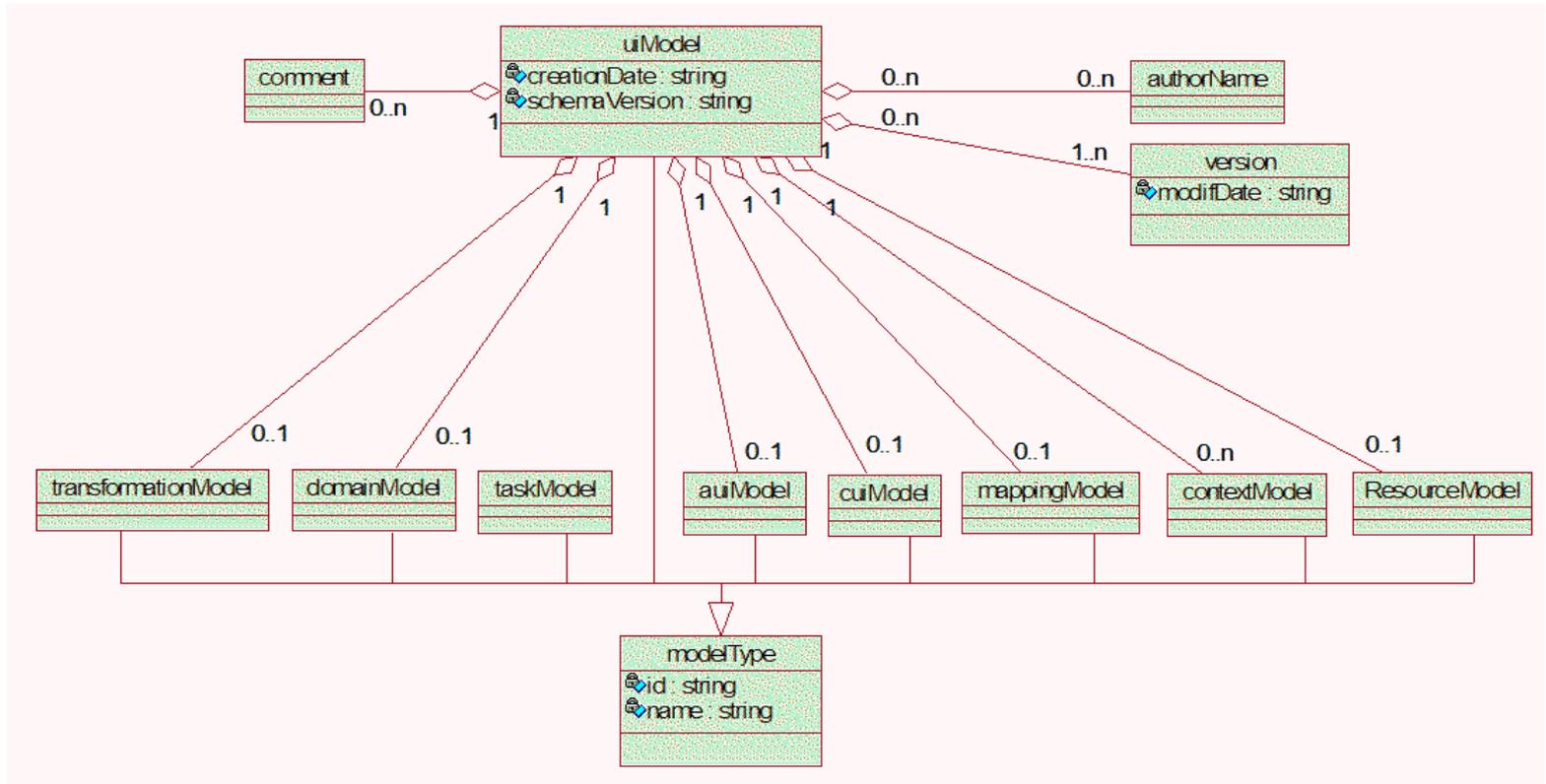
DIPARTIMENTO  
DI INFORMATICA



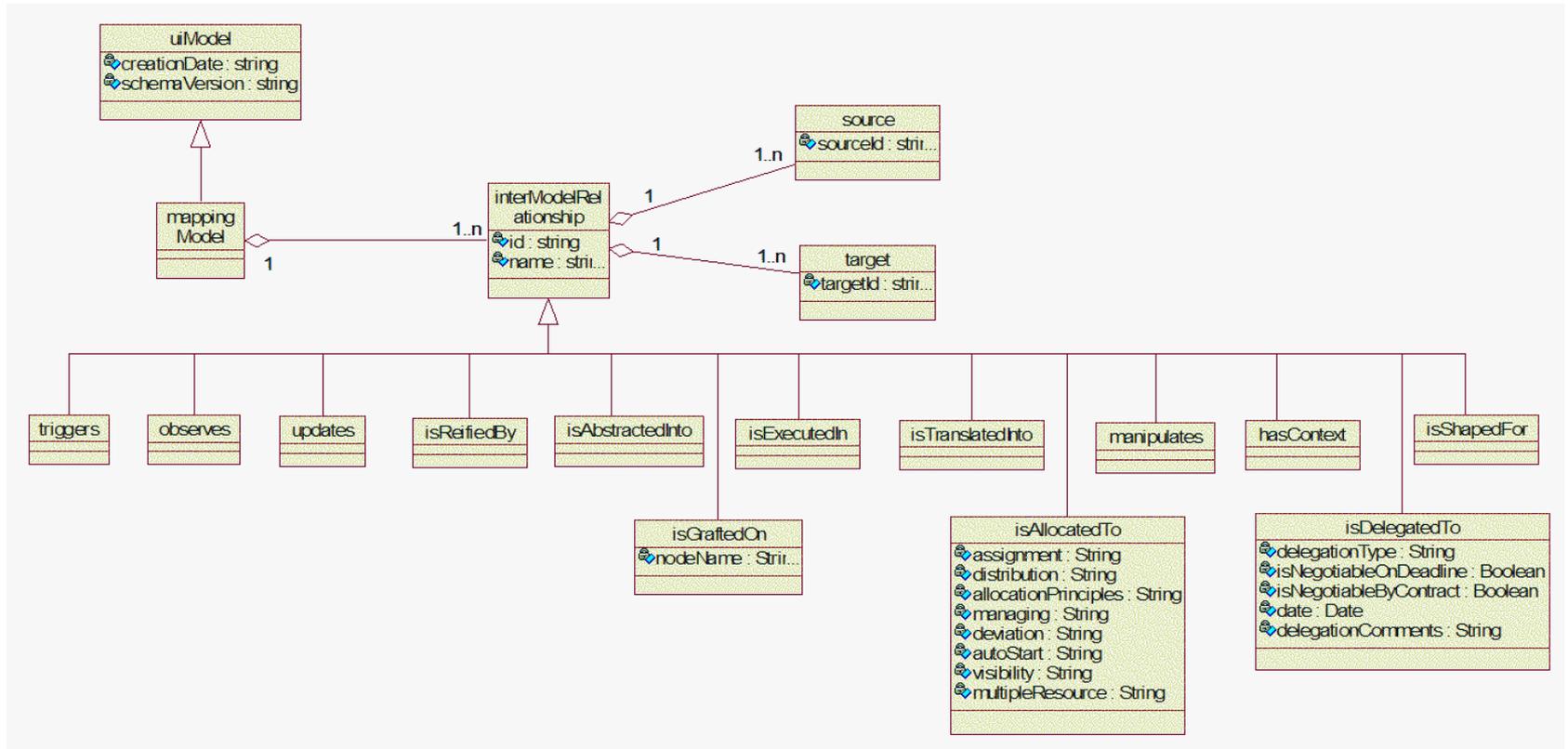
**SAPIENZA**  
UNIVERSITÀ DI ROMA

**Lezione 16: Progettazione astratta con UsiXML**

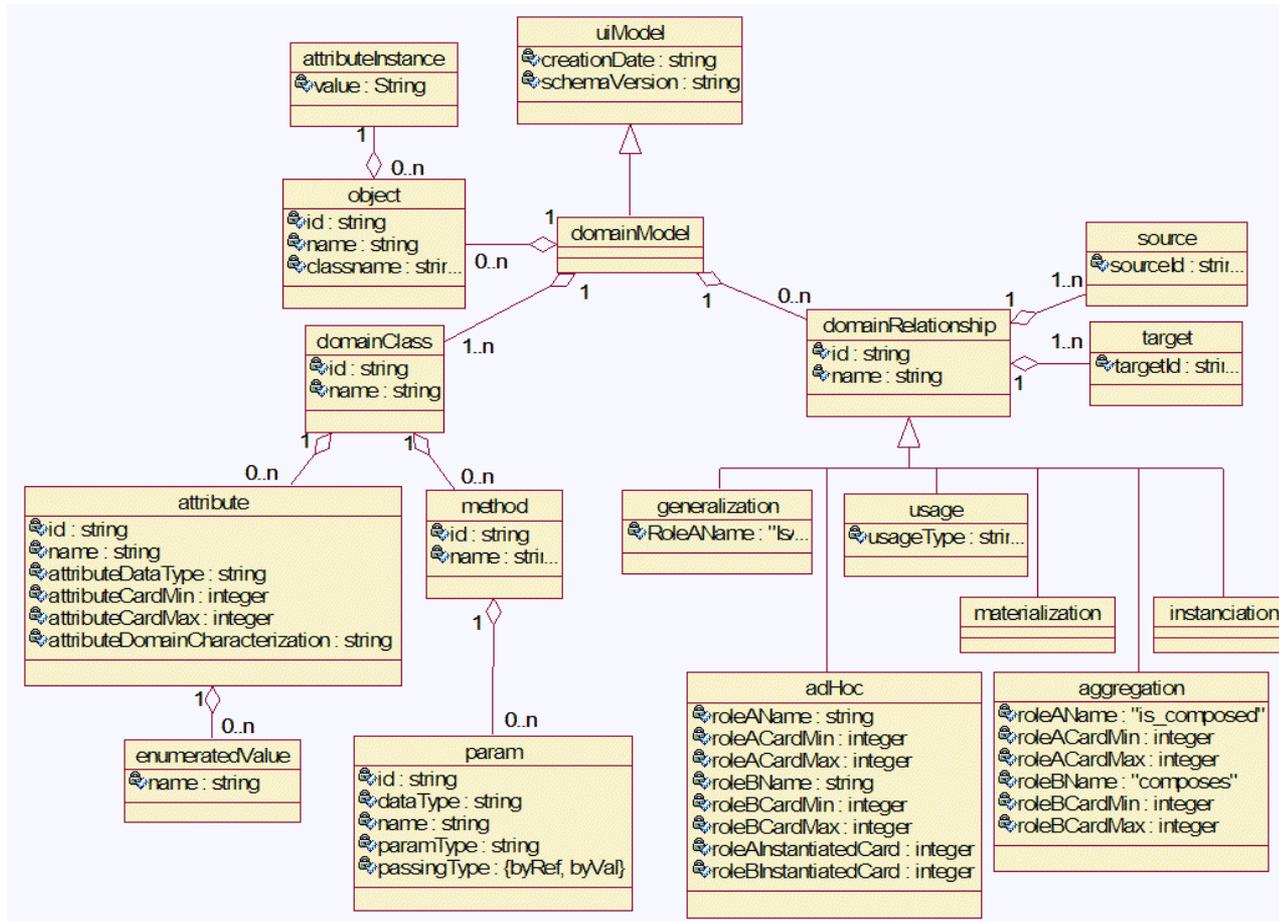
# Metamodello UsiXML



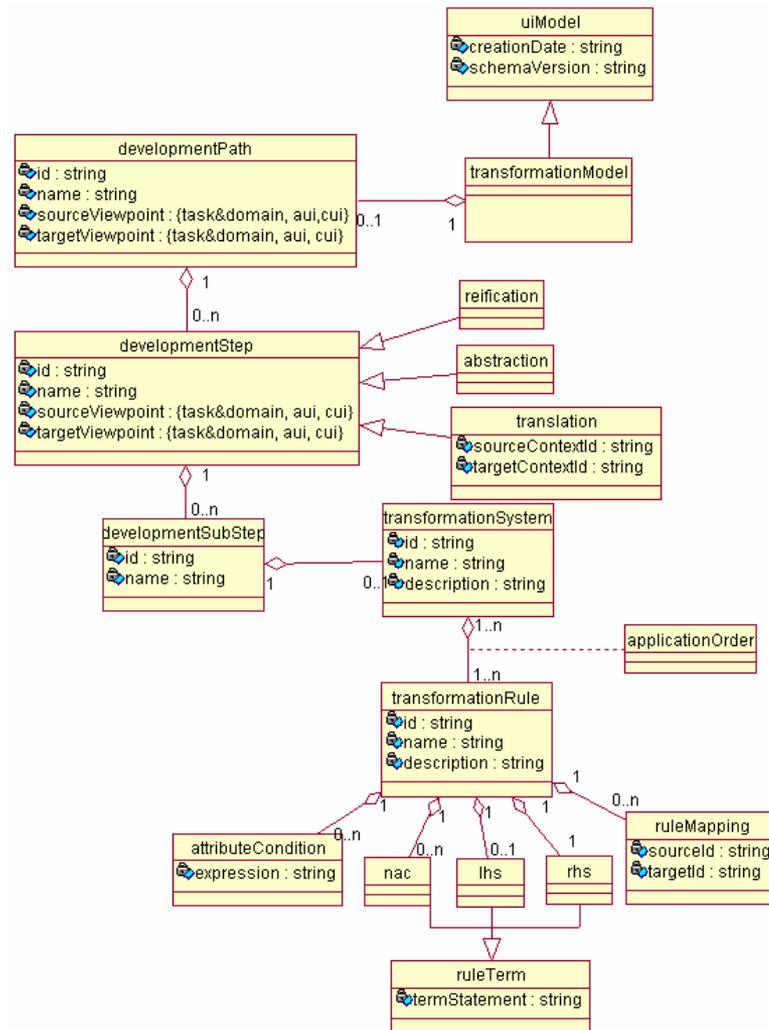
# Mapping model



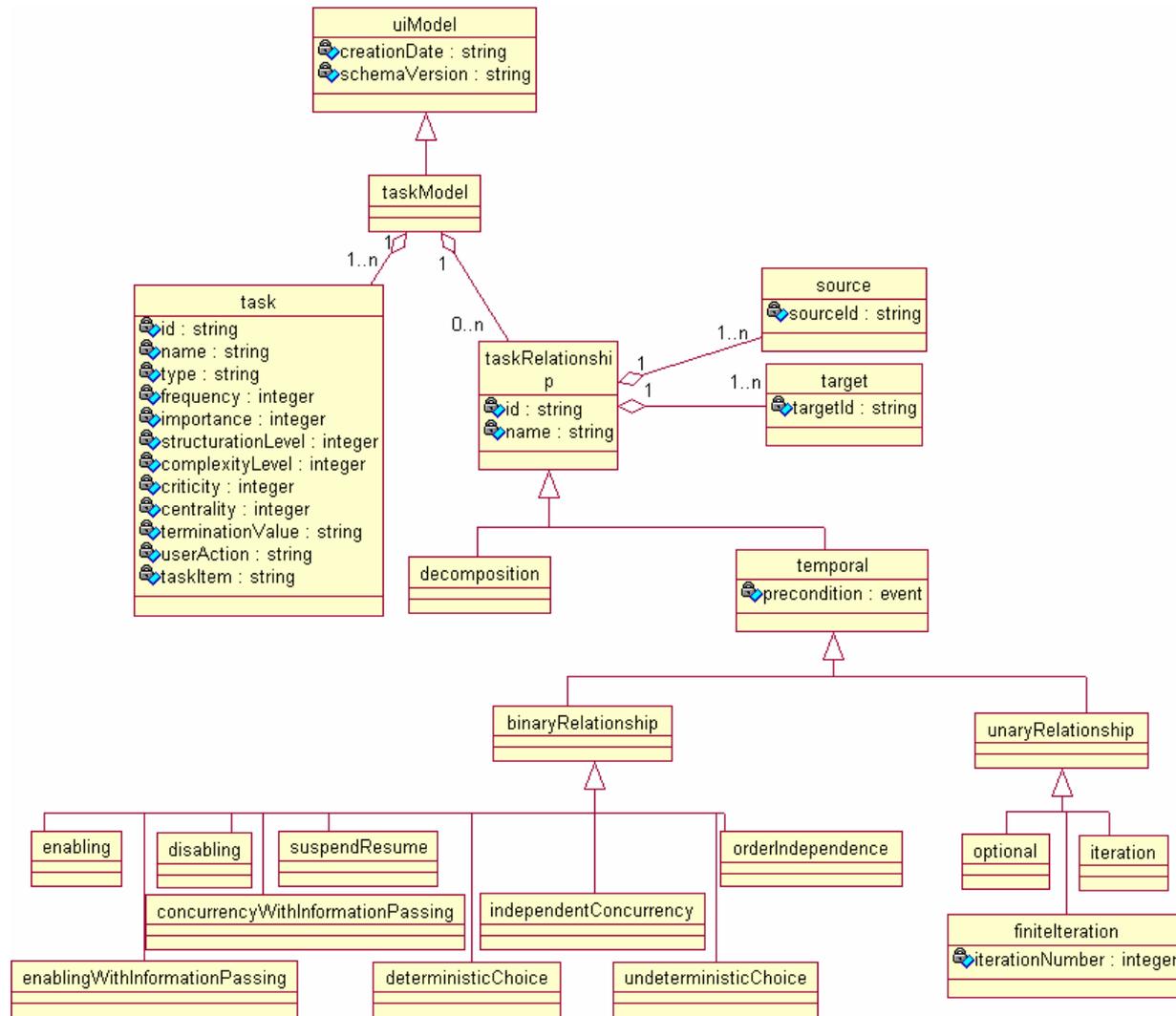
# Domain model



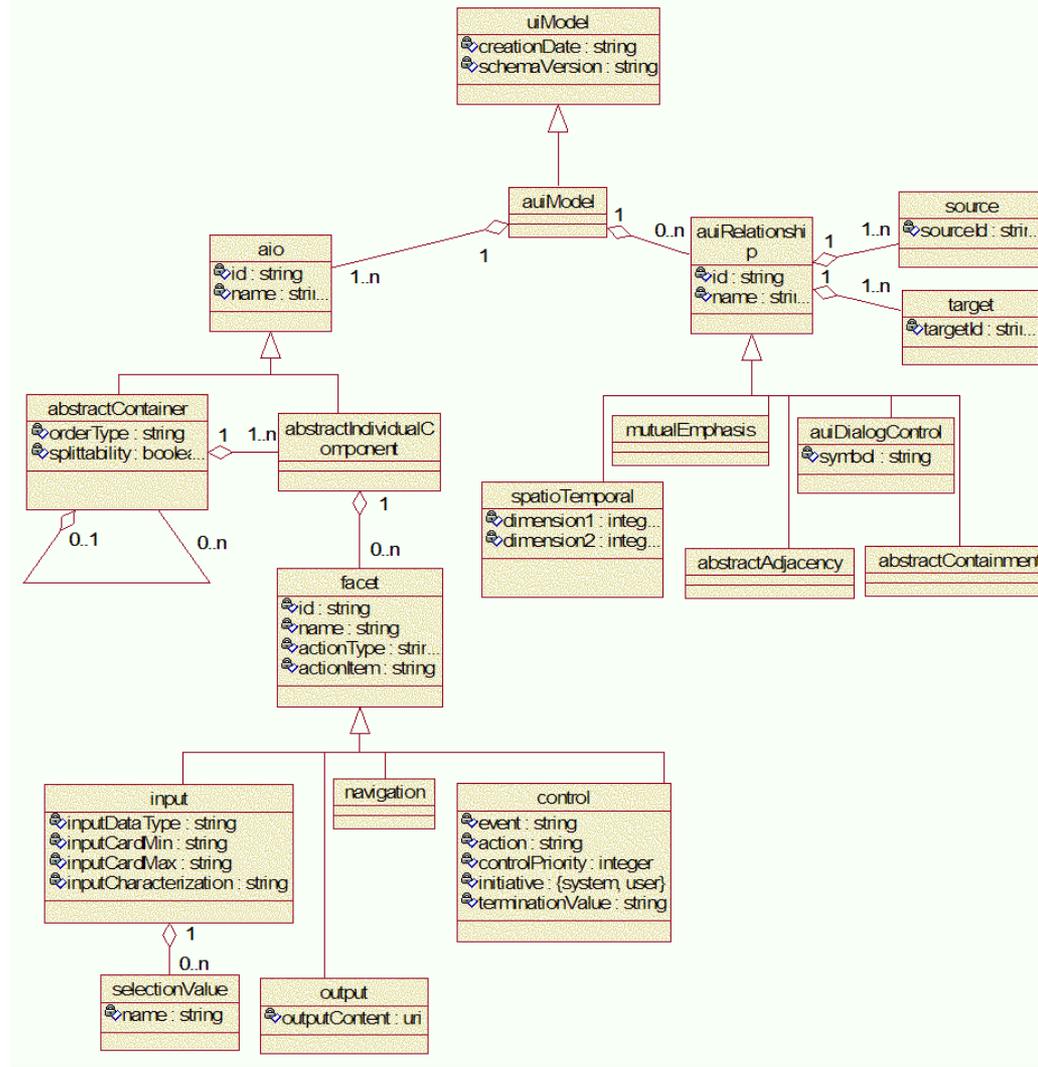
# Transformation model



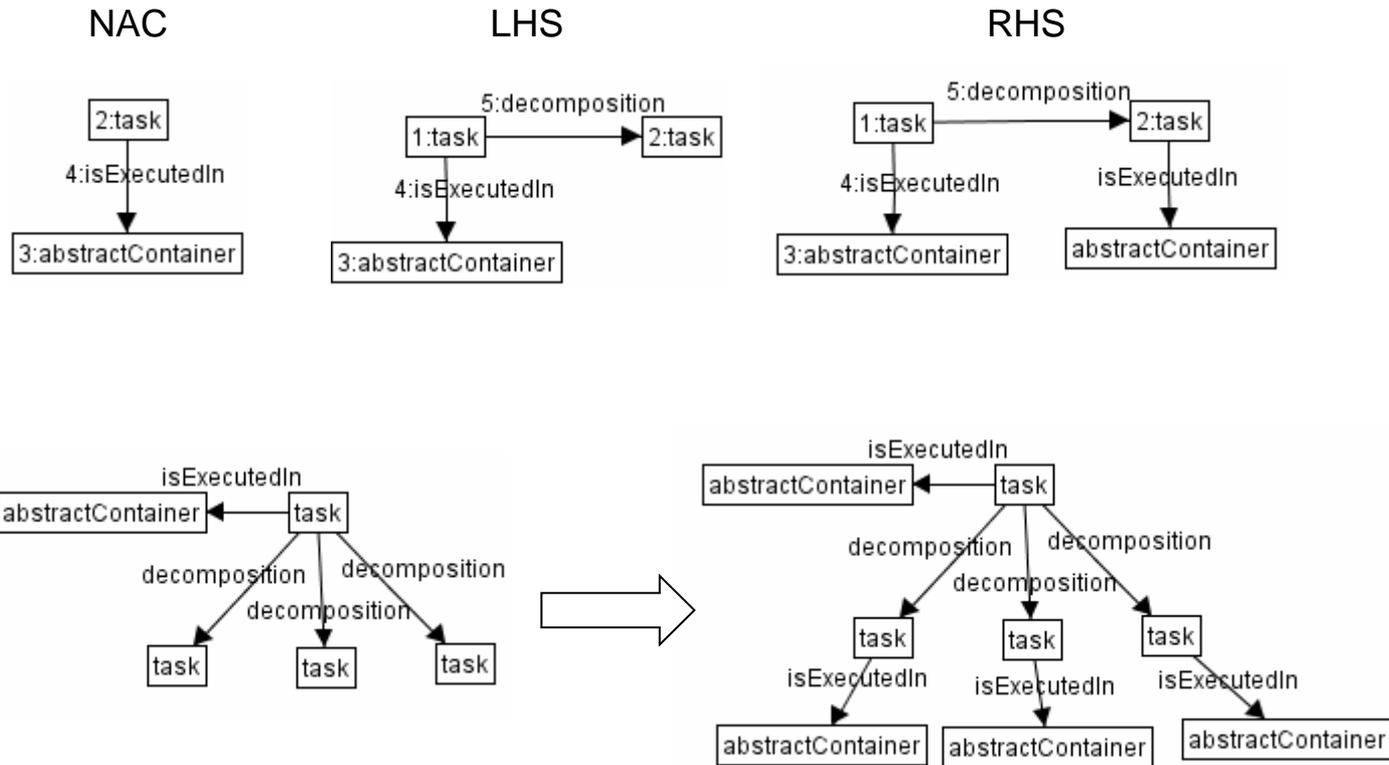
# Task model



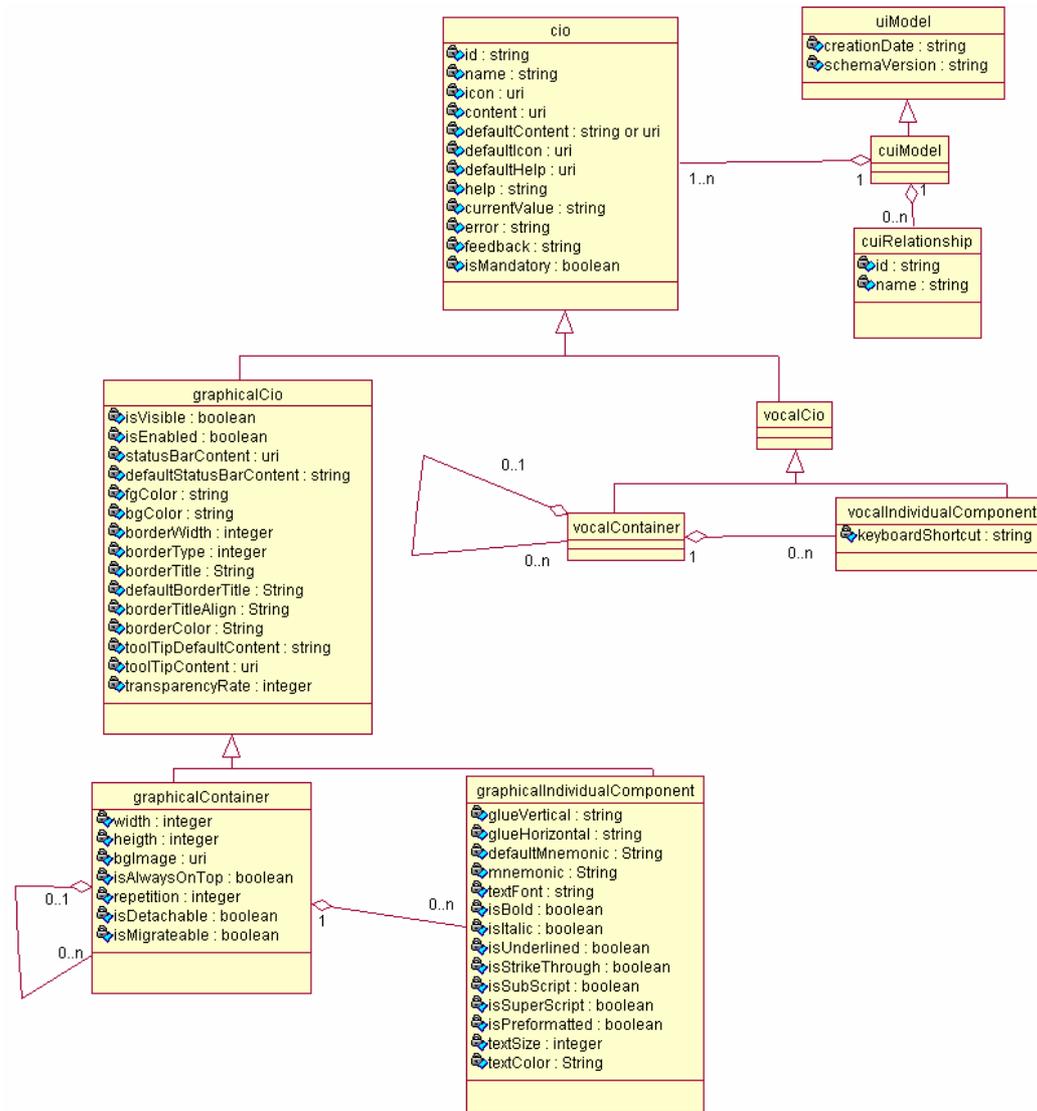
# Abstract User Interface Model



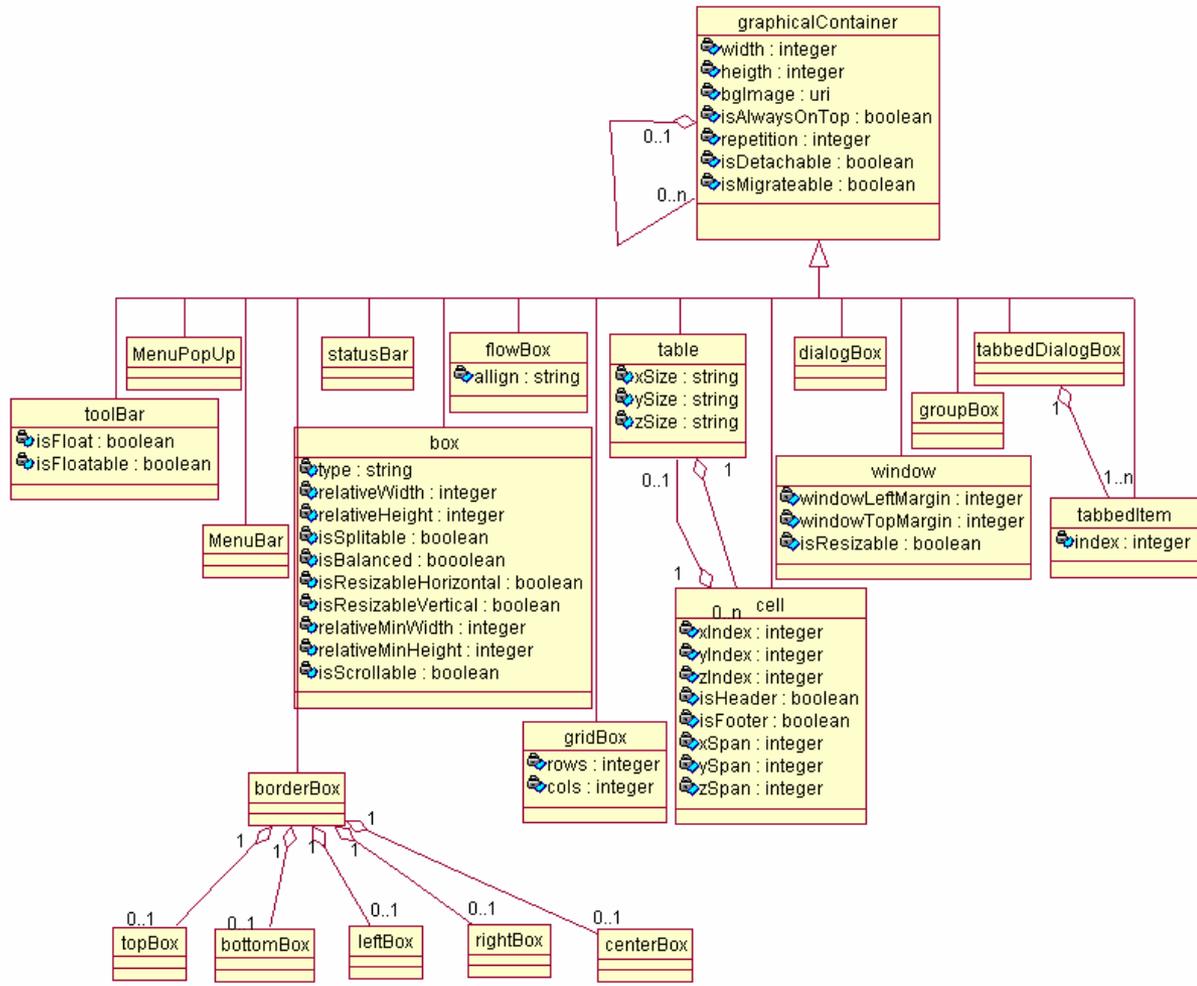
# Da Task model a AUI model



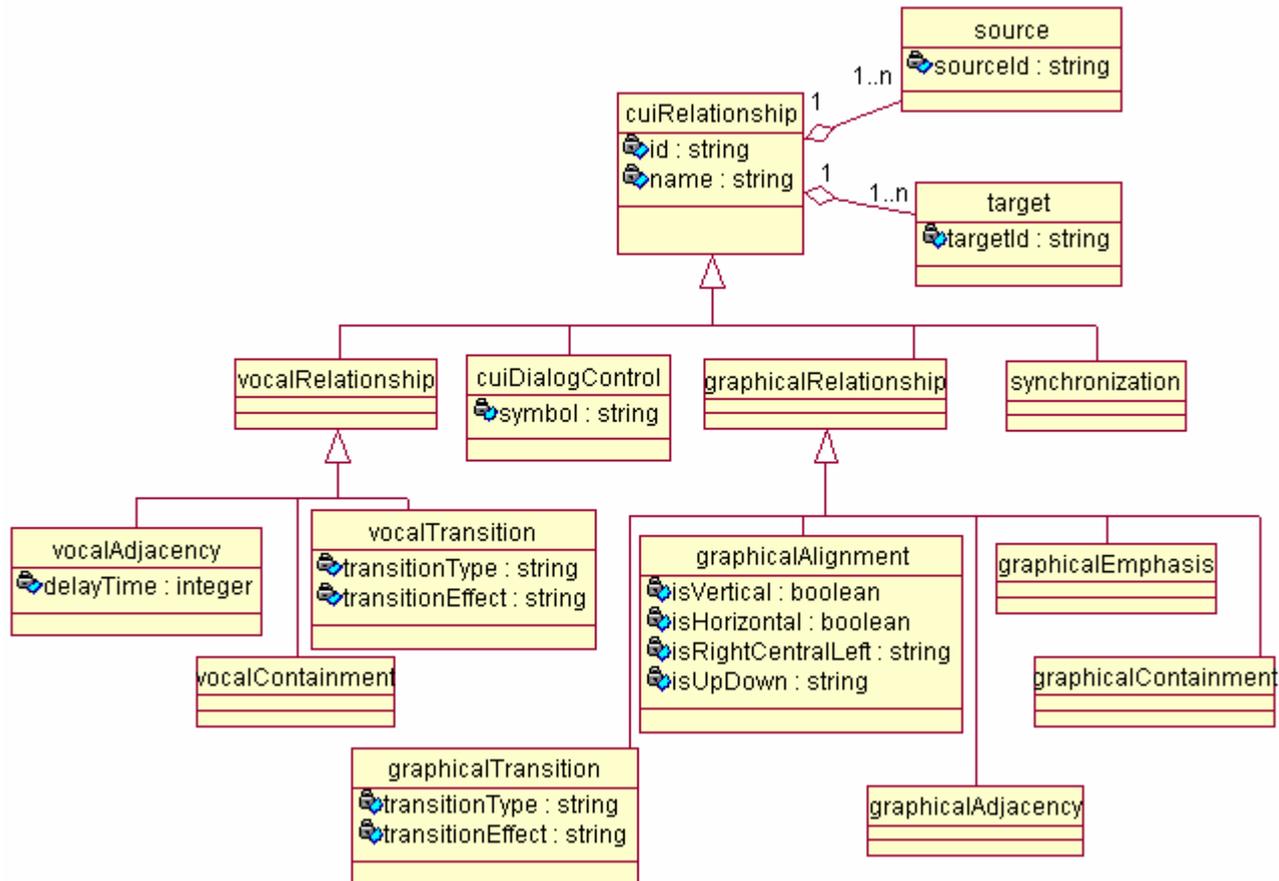
# Concrete User Interface Model (estratto)



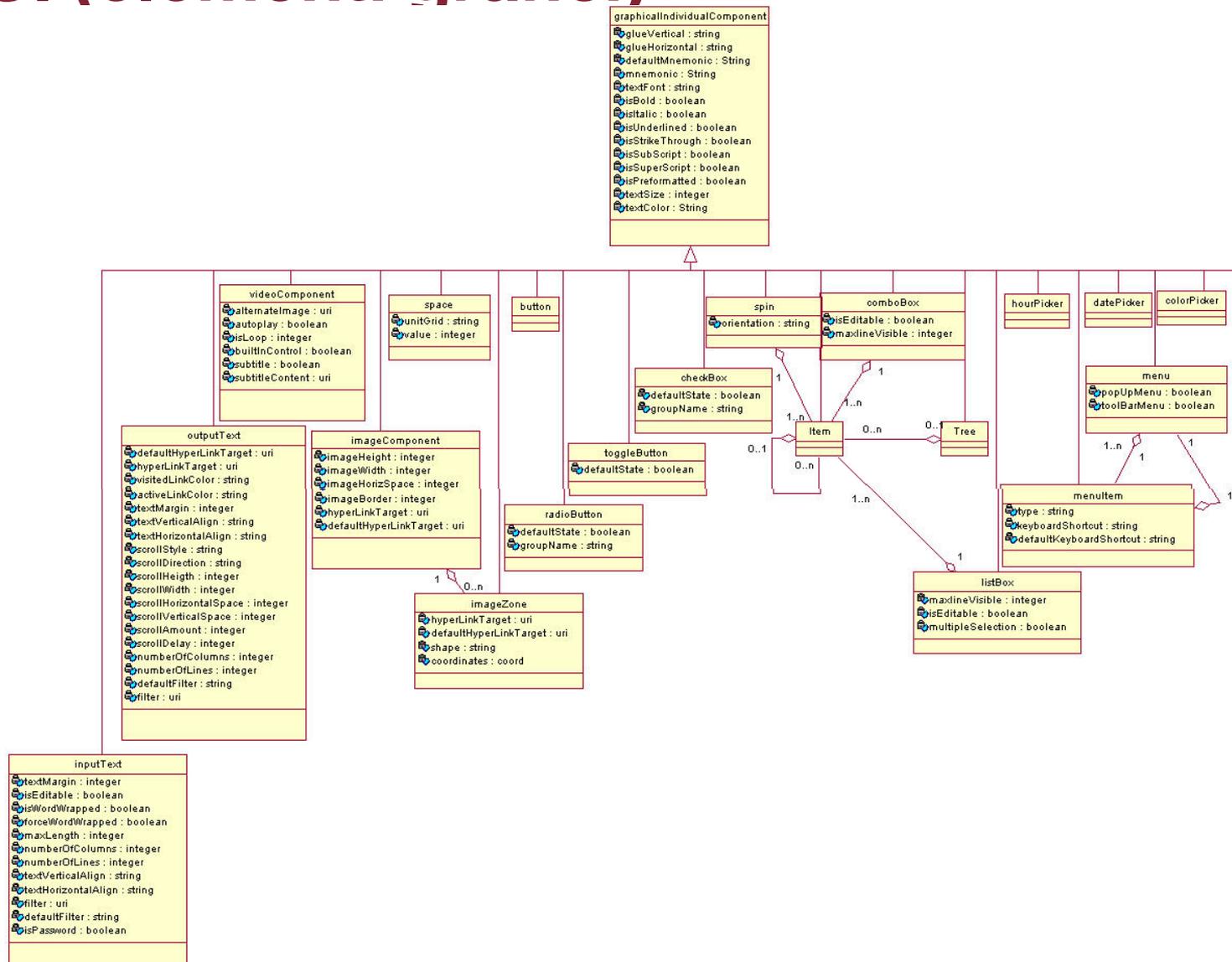
# CUI (contenitori grafici)



# CUI (relazioni)



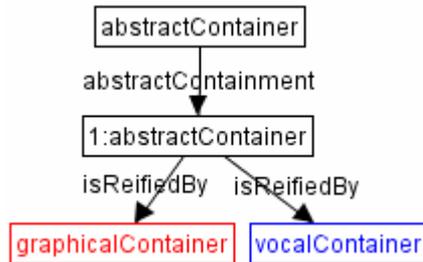
# CUI (elementi grafici)



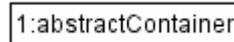


# Da AUI model a CUI model (multimodale)

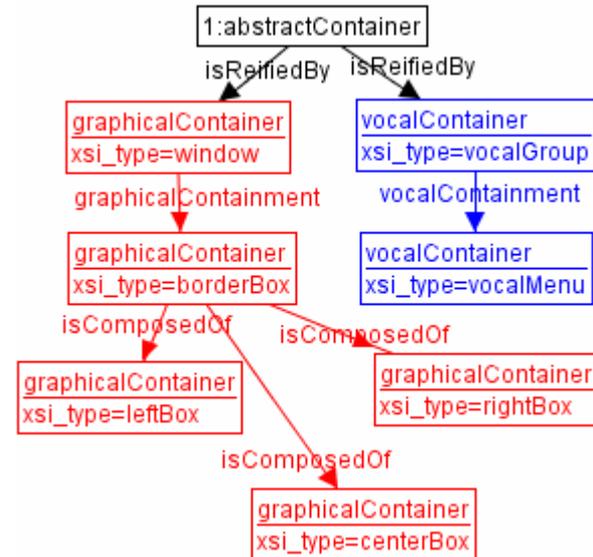
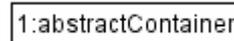
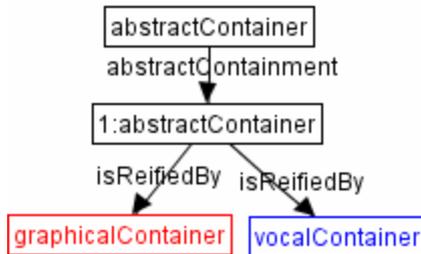
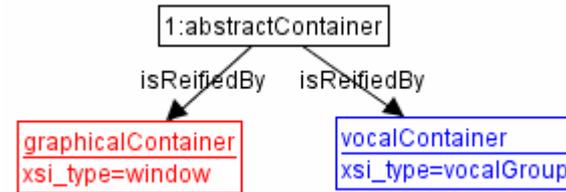
NAC



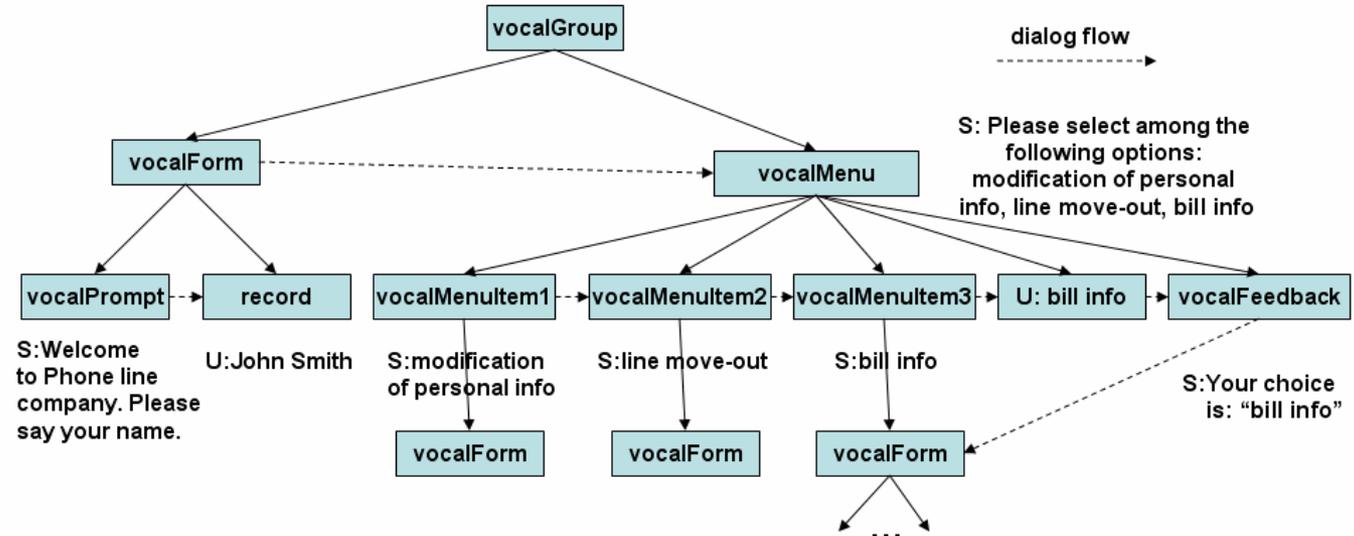
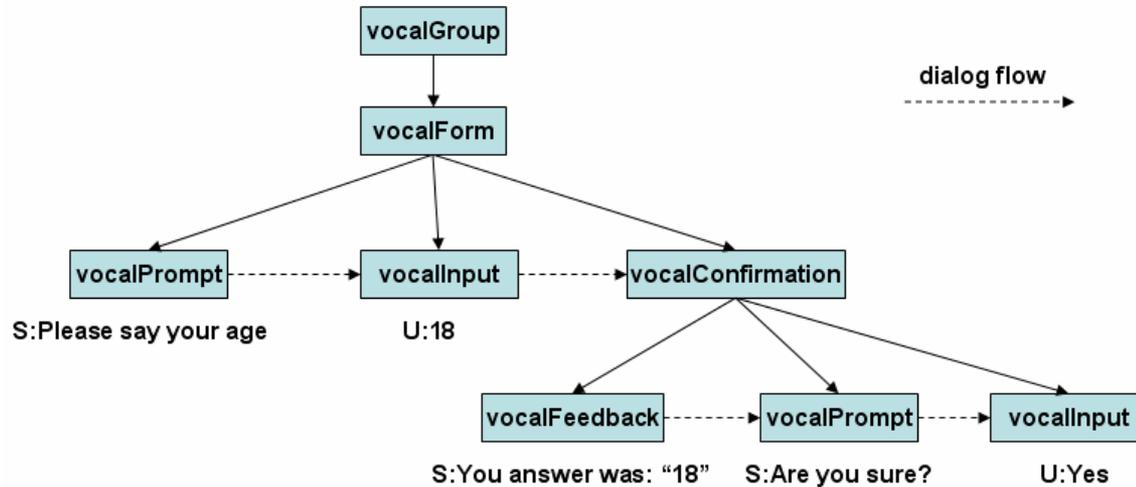
LHS

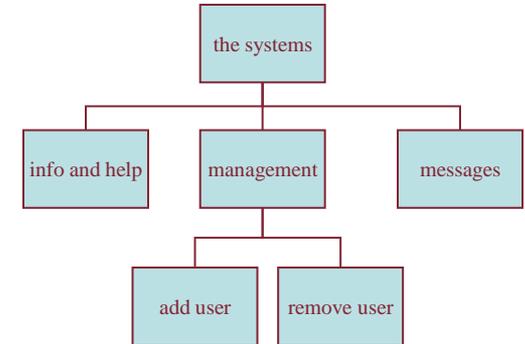
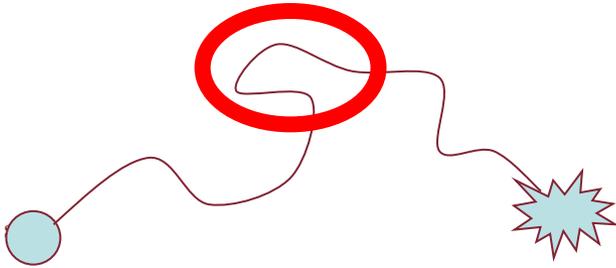


RHS



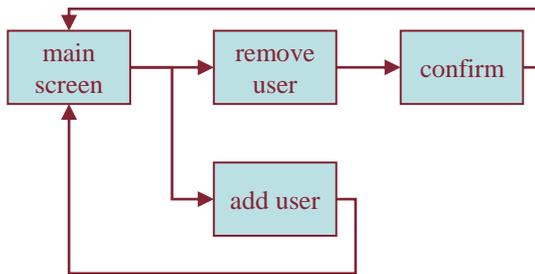
# Progettazione del dialogo con CIO vocali





# Progetto della navigazione

Struttura locale – schermata singola  
struttura globale – intero sito



# Livelli

- Scelta dei congegni
  - menu, pulsanti etc.
- Progetto schermo
- Progetto navigazione in applicazione
- Ambiente
  - Altre applicazioni, O/S

# Sul web ...

- Scelta dei congegni
- Progetto schermo
- Progetto navigazione
- Ambiente
- elementi e etichette
  - `<a href=“...”>`
- Progetto pagina
- Struttura sito
- Rete, navigatore, collegamenti esterni

# Dispositivi fisici

- Scelta dei congegni
- Progetto schermo
- Progetto navigazione
- Ambiente
- Controlli
  - pulsanti, manopole, quadranti
- Disposizione fisica
- Modalità dispositivo
- Mondo reale

# Pensando alla struttura

- In schermata
  - Abilitazioni / disabilitazioni / trigger
- Locale
  - A partire da questa schermata
- Globale
  - Struttura sito, movimento fra schermate
- Ancora più ampio
  - Relazioni con altre applicazioni

# Locale

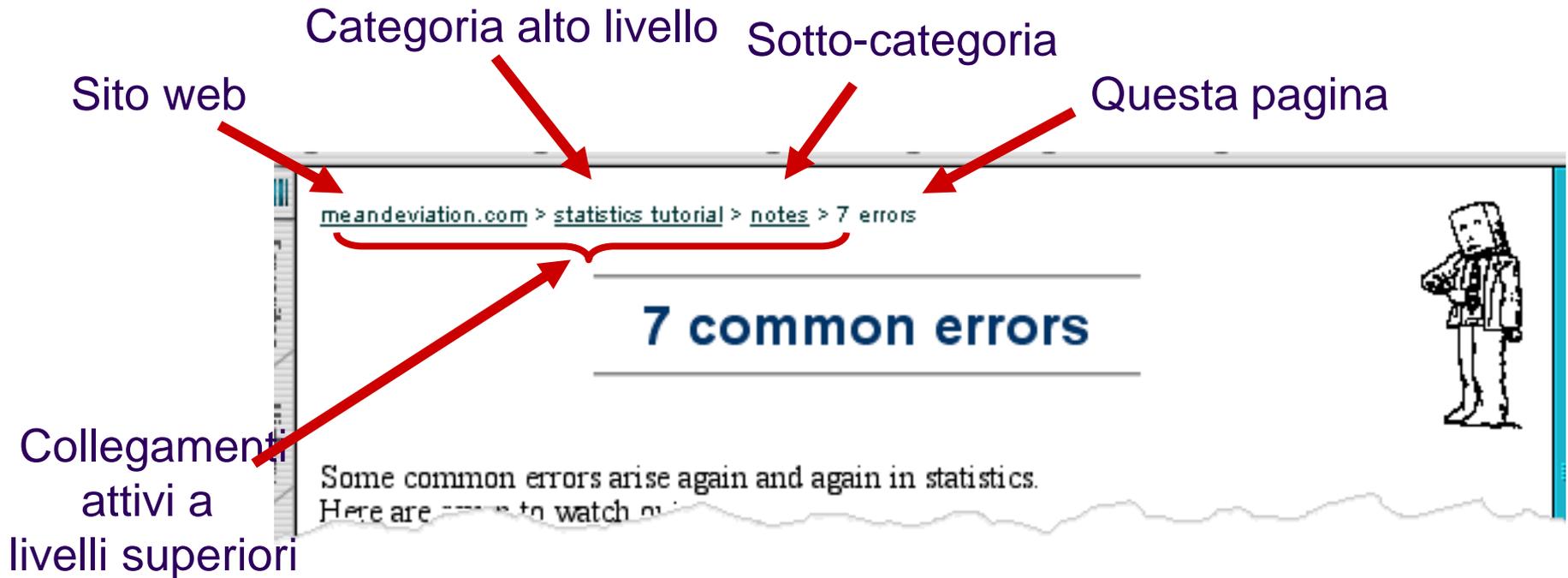
Da una schermata verso l'esterno

# Regole d'oro

- Sapere dove ci si trova
- Sapere cosa si può fare
- Sapere dove si sta andando
  - O cosa succederà
- Sapere dove si è stati
  - O cosa si è fatto

# Dove ci si trova – briciole di pane

Mostra cammino in gerarchia sito



# Globale

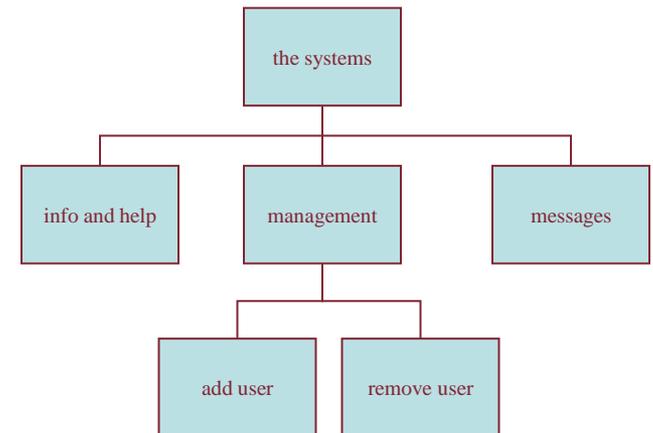
Tra schermate  
All'interno dell'applicazione

# Diagrammi gerarchici I



# Diagrammi gerarchici II

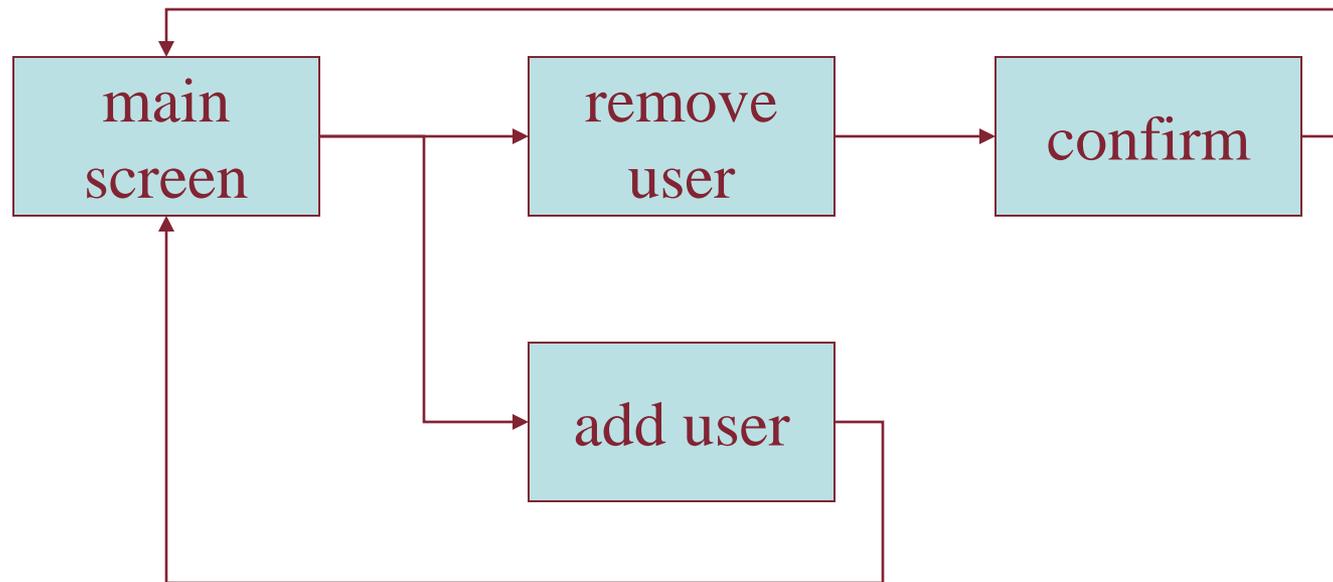
- Parti di applicazione
  - Schermate o gruppi di schermate
- Tipicamente separazione funzionale



# Navigazione nelle gerarchie

- Profondità complica!
- Uso improprio regola  $7 \pm 2$  di Miller
  - Memoria a breve termine, non taglia del menu
  - Ma profondità rilevante
- Ottimale?
  - Molti elementi su ogni schermo
  - Ma strutturati entro schermo

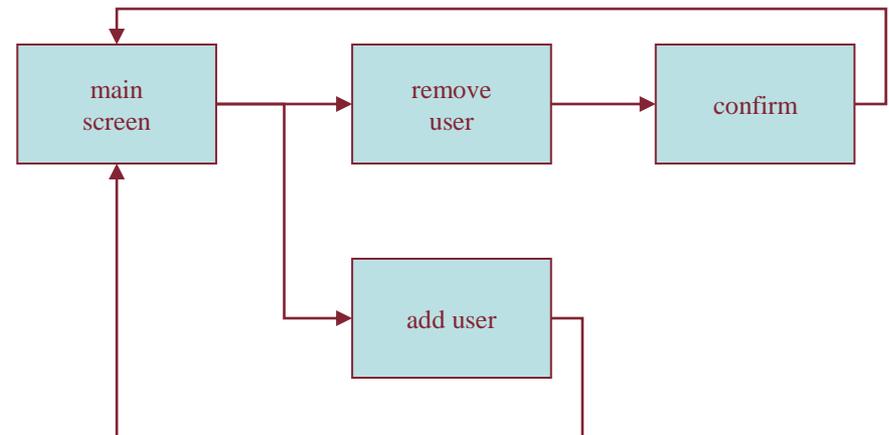
# Diagrammi di rete I



- Mostrano diversi cammini nel sistema

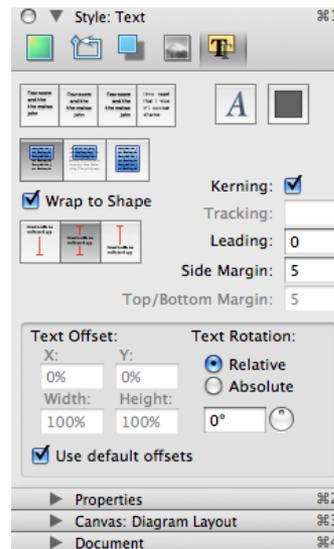
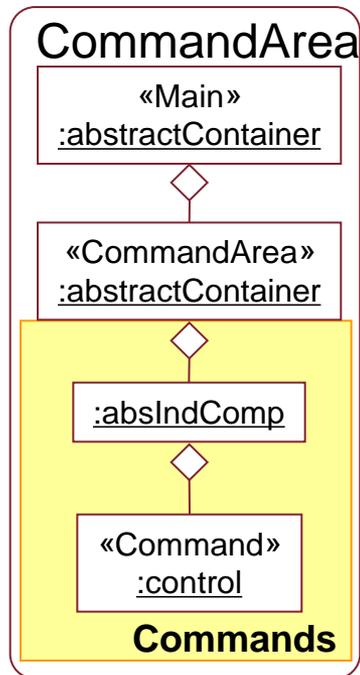
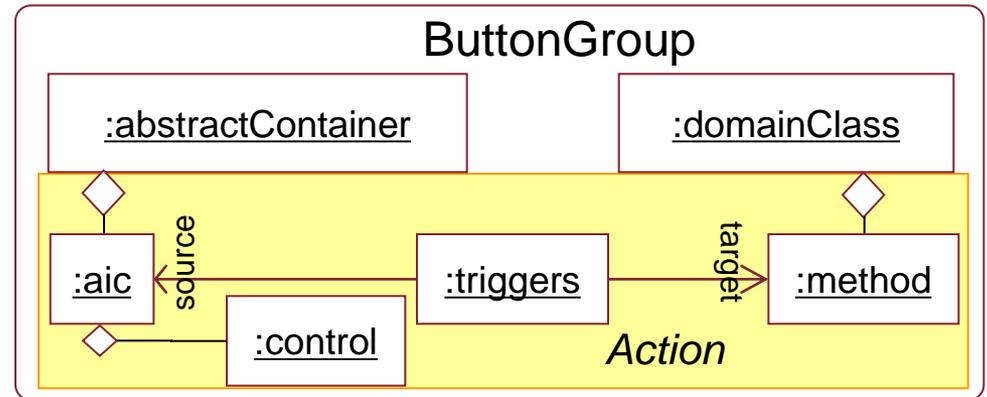
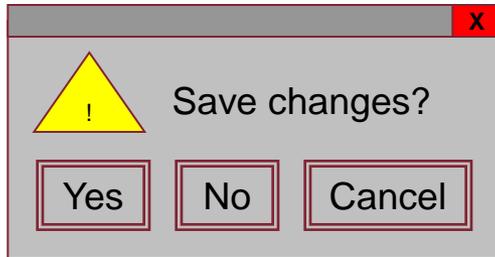
# Diagrammi di rete II

- Cosa porta a cosa
- Cosa succede quando
- Includono ramificazioni
- Più orientati a compito che gerarchia

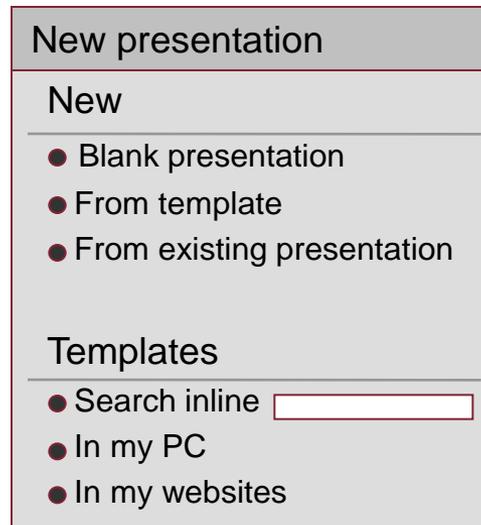




# Esempi

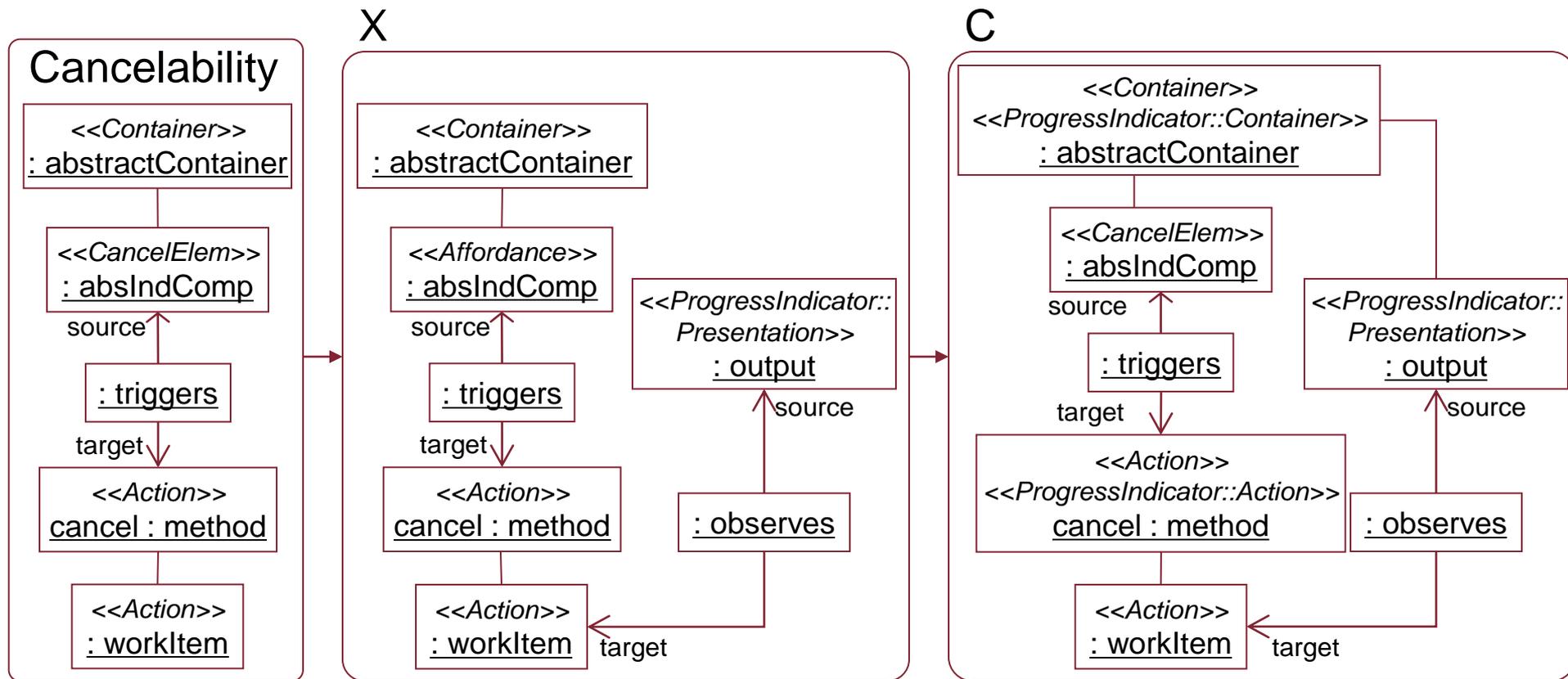


Action  $\geq 2$ , Action  $\leq 5$

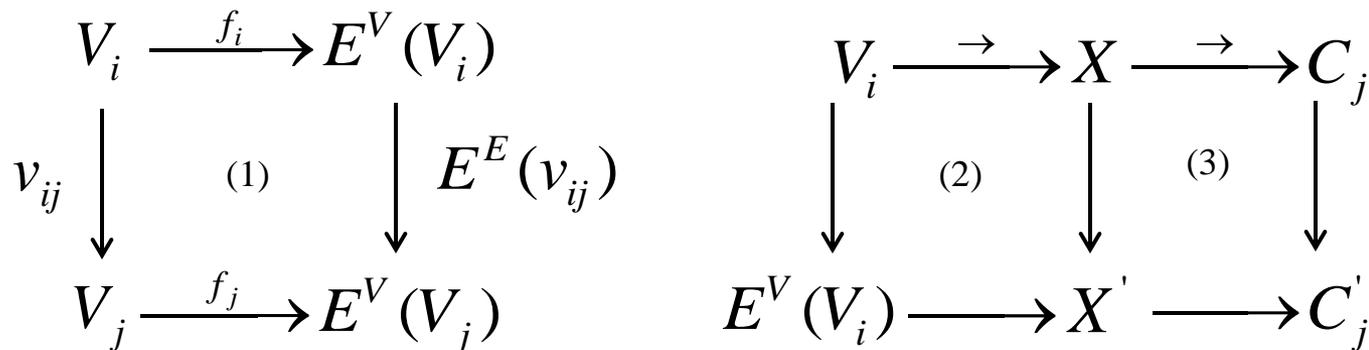
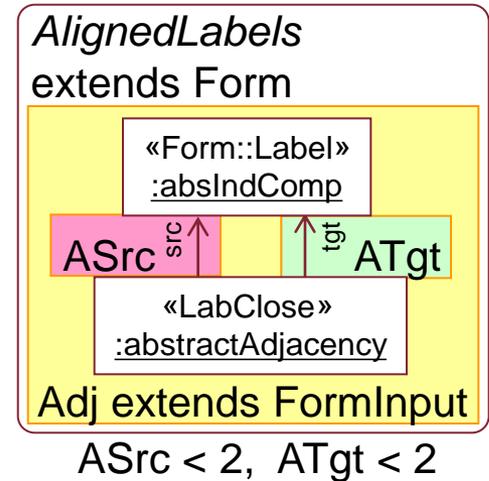
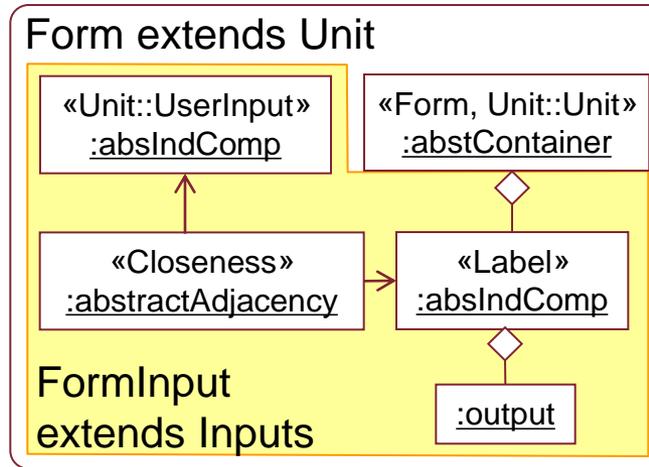
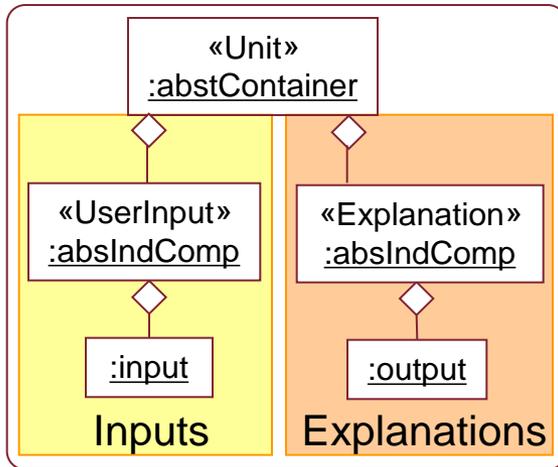




# Vincoli

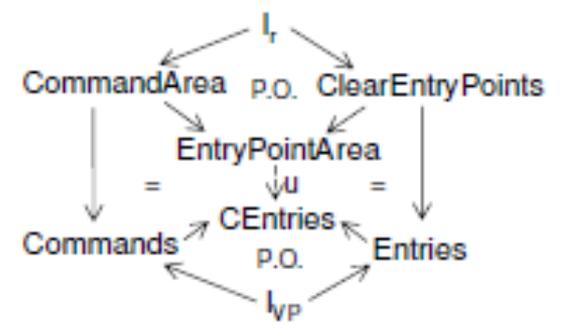
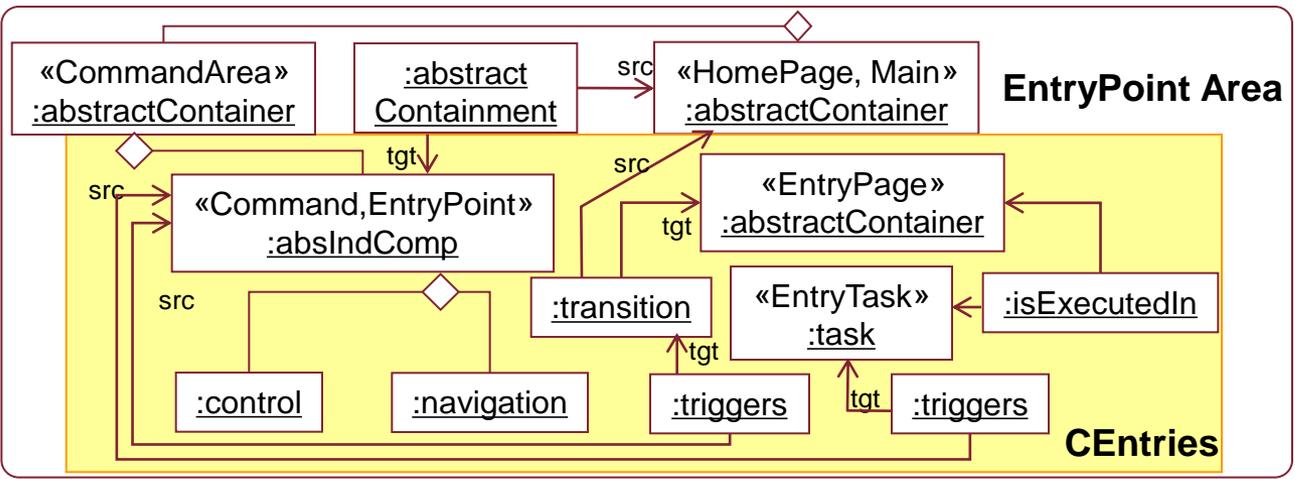
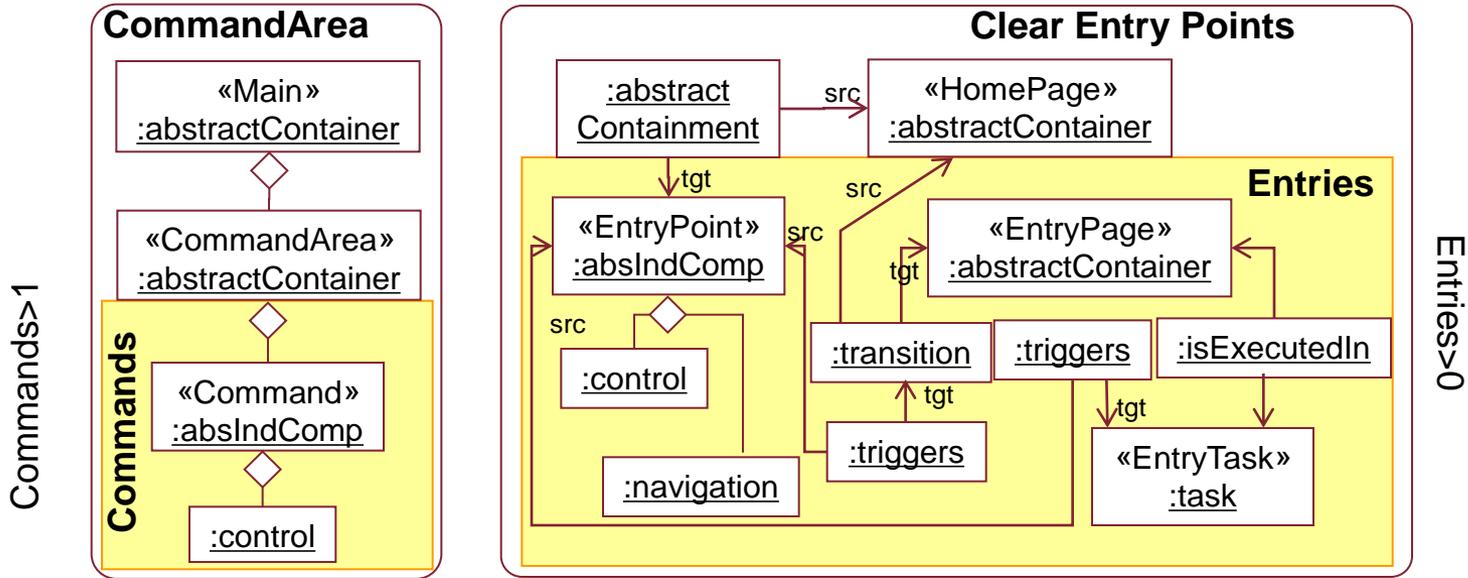


# Sottotipizzazione

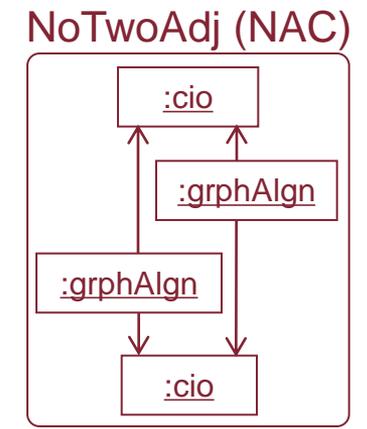
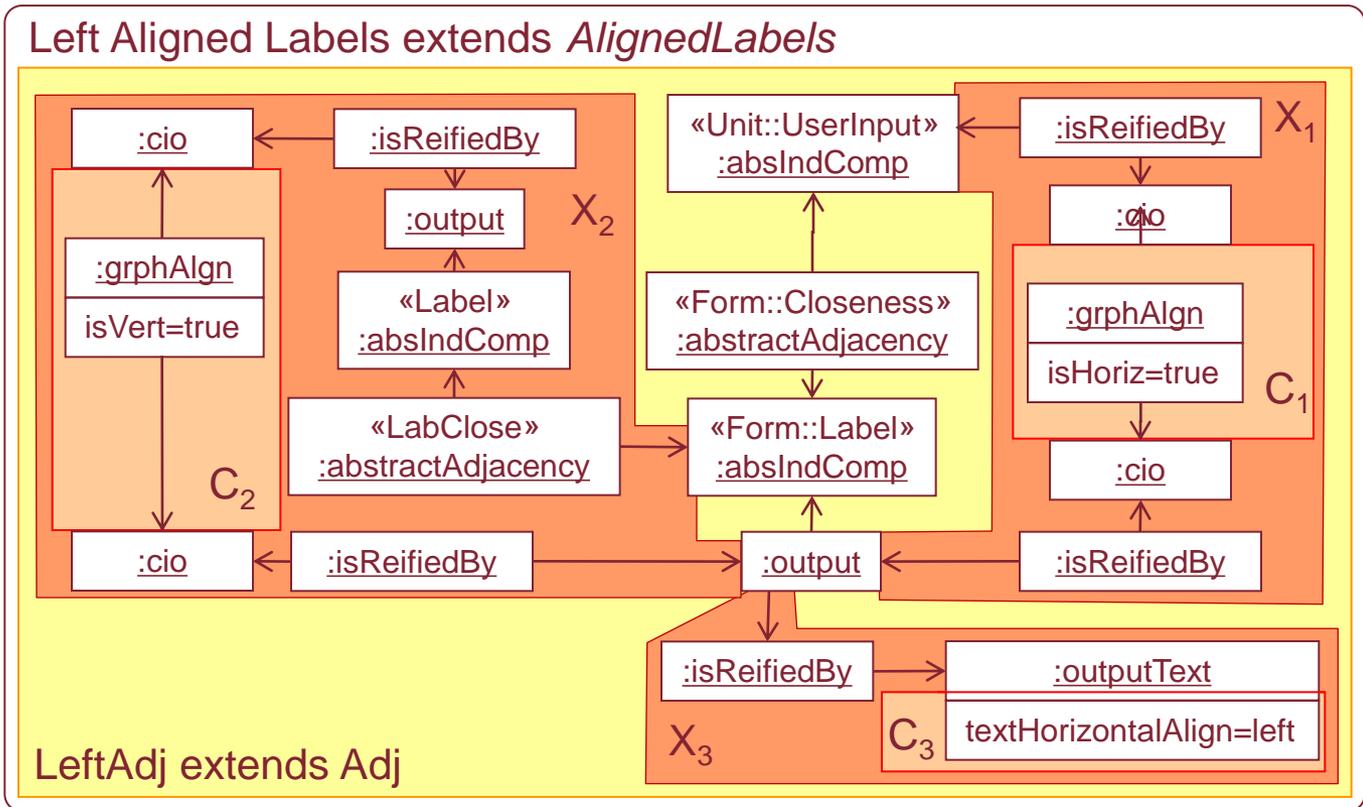
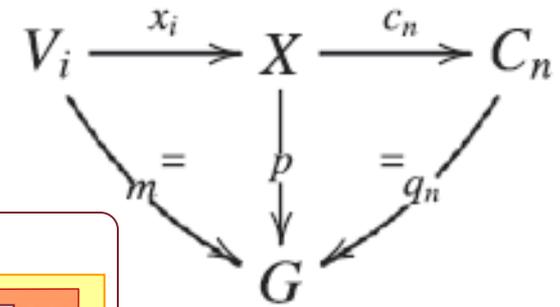


**Th. 1 (Subtyping)** *Given patterns  $VP$  and  $VP'$ , if  $VP' \sqsubseteq VP$  then  $SEM(VP') \subseteq SEM(VP)$ .*

# Composizione di pattern



# Vincoli negativi e conflitti



Tutte le specializzazioni di *AlignedLabels* sono in conflitto fra loro