

# *Analysis of Deviations*



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# Inspection-based Evaluation



- ⌘ Use of task models in the evaluation phase
- ⌘ Systematic analysis of potential effects of user errors
- ⌘ Evaluation of prototypes during their evolution
- ⌘ Application to case studies

# The method



- ⌘ Development of system task model
- ⌘ Analysis of deviations related to basic tasks
- ⌘ Analysis of deviations in high-level tasks
- ⌘ Interdisciplinary analysis

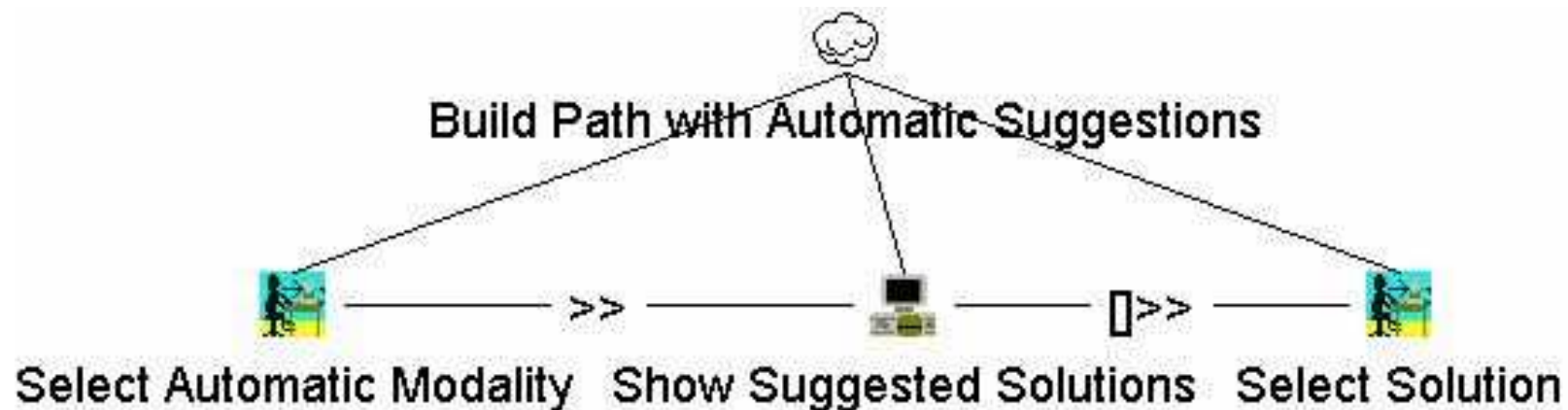
# Refined guidewords (basic tasks)



- ⌘ NONE: initial information, performance, result
- ⌘ OTHER THAN: less, more, different
- ⌘ ILL-TIMED: too early, too late

# Interpretation for high-level tasks

- ⌘ NONE: initial information, performance, result
- ⌘ OTHER THAN: less, more, different
- ⌘ ILL-TIMED: too early, too late



# Organisation of an evaluation session

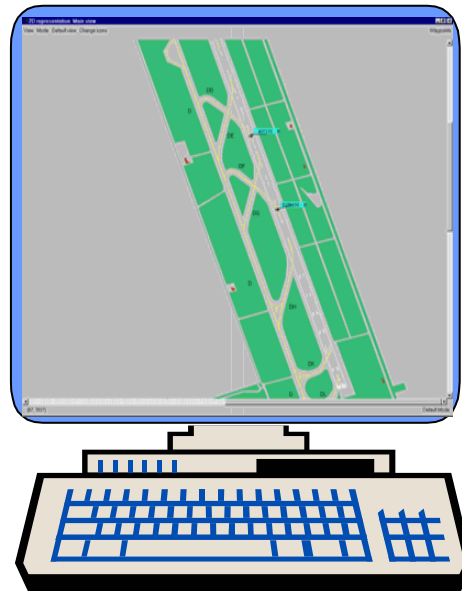
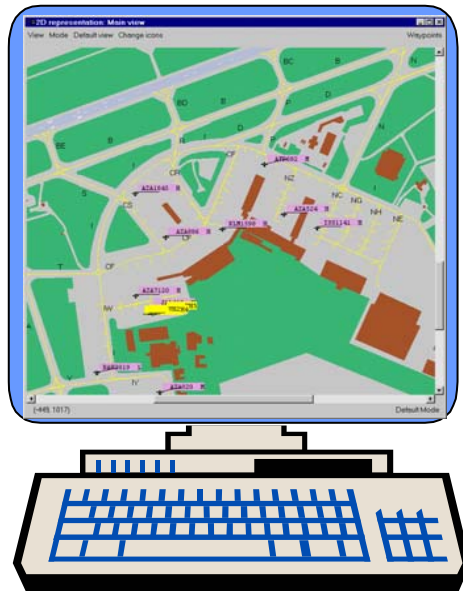
- ⌘ Introduction of the method
- ⌘ Introduction of the prototype
- ⌘ Short use of the prototype
- ⌘ Prototype available during exercise
- ⌘ Task model available to evaluators
- ⌘ Audio record

# Organisation of an evaluation session

- ⌘ Evaluators lead discussion
- ⌘ Questions derived from task model + classes of deviations
- ⌘ They are related to user interface elements
- ⌘ Identification of the information necessary for each task performance
- ⌘ Tables (useful more as documentation or design rationale)

# The MIDAS User Interface

Ground Controller Tower Controller



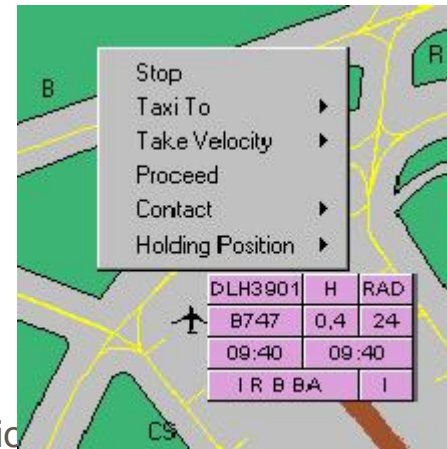
Enriched Flight labels:



Standard mode



Selected mode



Send instructions



# Method Evolution



- ⌘ Safety-Critical equipped with mobile devices
- ⌘ Integration with distributed cognition
- ⌘ Analysis of the representations and their properties
- ⌘ Ciampino air traffic control room (ENAV)
  - ☒ Take over position between two controller teams
  - ☒ De-combining air traffic sectors