

## ***Interactie: multimodal interaction***

### Keywords

Visualisatie, multimodaal, spraakanalyse, tekstgeneratie, fax-machine

### Probleemstelling

Current day man-machine interfaces are difficult to operate. We seek to close the gap between man and machine by using more than one human modality such speech and text.

### Technisch probleem

The system illustrates (i) how the combination of speech and graphics enriches the possibilities of human-computer communication, and (ii) to develop methods and algorithms for an effective combination of those two modalities. The hierarchical structure of a fax machine is represented in a scene graph and is used in the dialogue with the user, supporting both spatial reasoning and graphical presentations.

### Soort oplossing

The input/output of the system is based on two modalities: speech and visual presentation. The system applies spatial reasoning techniques aimed at (i) the interpretation of words as “behind, in front of, on, left of” in spoken language and, (ii) the generation of such references for use in the spoken replies.

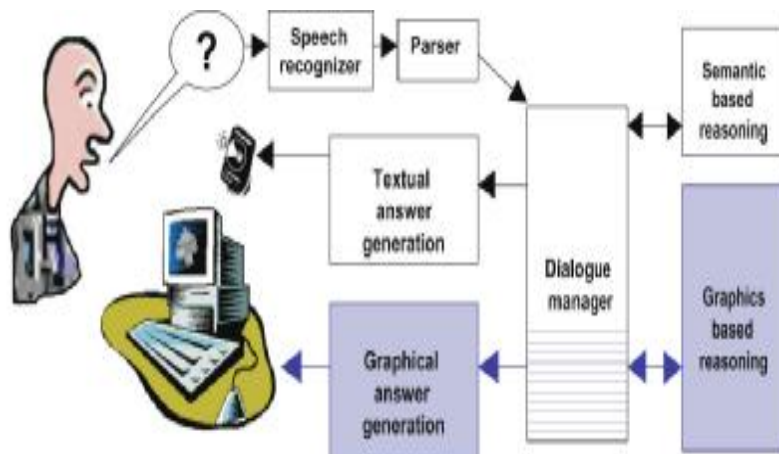
### Vergelijking met bestaande oplossingen

### Potentiële afnemers

Manufacturers of easy to operate machines, VCRdesigners

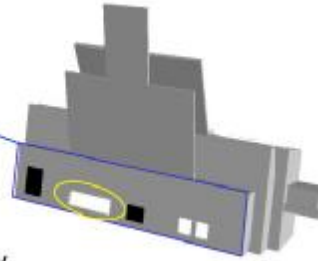
### Contact

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**User:** "where is the printer slot?"

- Search for object parent
- Select meaningful descriptions



1 priority

Location on the surface

- 1.1 on the corner
- 1.2 on the right / left side
- 1.3 on the top/ bottom face
- 1.4 on the front (back face)

2 priority

Location relatively to neighbor objects

- 2.1 between (two other objects)
- 2.2 in front of , under, above
- 2.3 to the right of
- 2.4 to the left of
- 2.5 behind, under
- 2.6. near

**System:** The printer slot is on the back face of the fax, to the right of the power slot