

(company develops a novel print-head technology. The design session concerned an innovative thermal printing pen - the 'digital pen' might be a toy or sort of artist' tool. The aim of the engineering brainstorming session was to obtain ideas for a prototype of the pen. This involved solving problems such as keeping the print head in contact and at the optimum angle to the media, despite wobbly arm moment).

Transcript-Extract: engineering design meeting1; (00:10:35 – 00:11:38)

ZNr utterance

- 136 AJ potentially it could be yeah (.) what did you come up with Jamie
- 137 Jamie I ended up with the (.)((leaves through papers)) hold on (2.2) sledge
- 138 AJ the sledge excellent
- 139 All ((laugh))
- 140 AJ so what did that generate then? ((writes: sledge))
- 141 Jamie well the sledge manages to keep level by having quite a wide base an
- 142 then a main force in the middle so unlike the set of skis where quite
- 143 narrow and you go up on an edge-
- 144 AJ yeah
- 145 Jamie when you're turning
- 146 AJ yeah
- 147 Jamie the sledge is er quite broad and then you have the weight right in
- 148 the middle so they manage to keep both runners on the snow-
- 149 AJ yeah ((writes: force in the middle))
- 150 Jamie more often than say a sledge or a snowboar- a skis or snowboard
- 151 AJ so so would you potential see some some some guiders almost down
- 152 the side of this?
- 153 Jamie well I guess the easiest way to keep the pen at a right angle would be
- 154 to have a set of stabilisers on it
- 155 AJ yeah
- 156 Jamie based on the idea of a sledge
- 157 AJ yeah no problem stabilisers (6) ((writes: stabiliser)) like a bicycle
- yeah that's a good
- 158 idea any other things that that sort of generated? either for you or
- 159 for anybody else?

Extract: engineering design meeting1; (10:28:14 – 12:00:00)

Segmentation (according to FSB; Kan & Gero, 2009)

- 138 Jamie I ended up with the+ hold on+ sledge
- 139 AJ the sledge excellent so what did that generate then? ((write: sledge))
- 140 Jamie well the sledge manages to keep level by having quite a wide base
- 141 AJ ((write: wide base))
- 142 Jamie and then a main force in the middle so
- 143 unlike the set of skis
- 144 where quite narrow and
- 145 you go up on an edge- when you're turning
- 146 the sledge is er quite broad
- 147 Jamie and then you have the weight right in the middle
- 148 so they manage to keep both runners on the snow-
- 149 AJ ((write: force in middle))
- 150 Jamie more often than say a sledge or a snowboard- a skis or snowboard
- 151 AJ some some guiders almost down the side of this
- 152 Jamie well I guess the easiest way to keep the pen at a right angle would be
- 153 Jamie to have a set of stabilisers on it based on the idea of a sledge
- 154 AJ yeah no problem++ stabilisers +++like a bicycle yeah that's a good
- 155 AJ ((write: stabilizer))

“In this chunk, a cluster of links, two participants were involved, the moderator (A) and a mechanical engineer (J). The focus of the discussion was “other products or situations where a product needs to follow a contour”. J suggested an object (structure) – “sledge” (segment 38) – and continued to explain the behaviour of the sledge: how it maintains contact or level on the snow (segment 40 and 48). The sledge was compared with a set of skis (segment 43) in terms of the structure (segment 44) and behaviour (segments 45, 47 and 48). The coding of segment 50 can be controversial; it was coded as expected behaviour (Be) as we interpreted J was borrowing the behaviour of the analogised objects and targeting those to be the expected behaviour of the designed object. Finally, the structure of stabilisers (segment 53) was suggested. Segment 39 was linked to segment 38 because the “write sledge” action was a response to the initiation and suggestion of the “sledge” in segment 38. J started explaining in segment 40 why a sledge was a proposed candidate for solution so segment 38 and 40 was linked. By examining the relationship of a segment with those preceding segments a linkograph was constructed.” (Kan & Gero, 2009: Using the FB Ontology to Capture Semantic Design Information in Design Protocol Studies. In: McDonnell & Lloyd: About: Designing. Analysing Design Meetings. 213-229).

