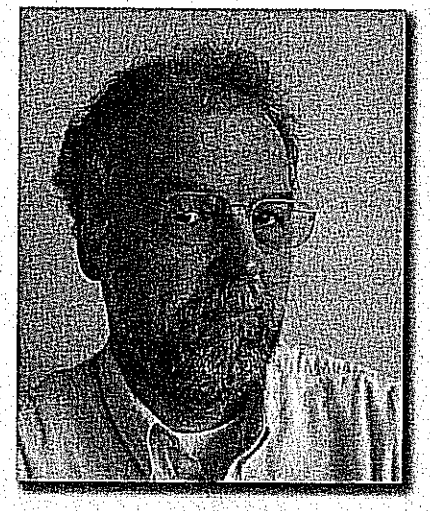
Frank, Andrew U. "How Usable Are Current Geoinformation Products?" *GIM International* (2001).

How Usable are Current Geoinformation Products?

Everybody is talking about the marvellous business opportunities for selling geographic information. We can clearly identify numerous decisions for which many people need geographic information. The lack of willingness on the part of people to pay for the acquisition of information and the difficulties involved in the collection of small fees are often cited as impediments but I think these could be overcome with the production of high quality, easy-to-use Geographic Information Products for which there would be demand.



List of Instructions

Some services for geographic information are already available, free of charge, on the Web. Most important are certainly the route planning systems and systems for information regarding public transportation. In this column I concentrate on route planning for driving by car, which is one of the most often used geographic information services. The route descriptions are typically lists with columns for location, turn instruction, distance, time and name or number of highway.

Some real examples from the web:
'Gloggnitz - after 4.2 km - turn left'
does this mean that 4.2 km after the town of Gloggnitz I have to turn left or that in Gloggnitz, after having driven 4.2 km from the last location, I have to turn left?
What am I to do with the two lines:
Kirchberg km 0.0
Ramssattel km 2.7?
I think it means that I should drive from Kirchberg to Ramssattel, about 2.7 km. But how do I find the road to Ramssattel? Let's hope there is a street sign with this name!

Interpretations

The services all use efficient algorithms to determine the shortest path in a database of street segments. For the programmer, the problem seems resolved and the path is communicated to the user by printing the street segment descriptions. The interpretation of this data is left to the driver. The examples above show that the data describing the street segments has different meanings depending upon who collected it. How can we define the semantics of instructions? We have to establish an ontology of the street network and build a model of the driver which simulates the operations carried out by real world drivers. Route descriptions use: go straight ahead, turn left, right, etc., move for a certain distance and even move for a certain number of intersections – but how am I to be certain that my judgment regarding what constitutes a street intersection is the same as that of the surveyors who collected the data?

Human Descriptions

None of these activities are without difficulty for the driver and the instructions do not resemble the core of driving instructions given by humans. Route descriptions given by humans rather go like this: Drive on Reinprechtsdorferstrasse till you reach the Gazelle Store (a bright blue-coloured chain store at the corner), then turn left into…
None of the route descriptions provided on the web uses landmarks! I understand that the databases used do not contain the landmark data necessary – no reason not to collect them in the field as soon as possible! In the meantime, clarification of what the data collected actually represent and what model of the driver is used could make it a whole lot easier to use the driving instructions and thus render them more in demand by the public.

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