

Keywords: claim construction, indefinite, means-plus-function, “means for”, sufficient description

General: The means-plus-function and adequate disclosure paragraphs of 35 U.S.C. § 112 may invalidate a patent claim unless there is support in the specification for the claimed structure.

*IBORMEITH IP, LLC, v.
MERCEDES-BENZ USA, LLC, AND DAIMLER AG,*
Case no. 2013-1007
Decided October 22, 2013

I. Facts

Ibormeith IP, LLC (“Ibormeith”) owns a patent for “Sleepiness Detection for Vehicle Driver of Machine Operator” (U.S. no. 6,313,749). Ibormeith sued Mercedes-Benz USA, LLC (“Mercedes”) for infringing claims 1, 5, 8, and 9 of that patent, claim 1 and 9 being independent (reproduced completely on pages 3 and 4 of the Opinion).

Claim 1 recites a “sleepiness monitor” that includes the following clause:

computational means for weighting the operational model according to time of day in relation to the driver or operator circadian rhythm pattern(s) and for deriving, from the weighted model, driver or operator sleepiness condition and producing an output determined thereby. (Emphasis added.)

Similarly, claim 9 recites:

computational means for computing steering transitions and weighing that computation according to time of day, to provide a warning indication of driver sleepiness. (Emphasis added.)

Mercedes argued at a claim-construction hearing that the means-plus-function “computational means” limitations in these claims were indefinite, which would also invalidate dependent claims 5 and 8. Ibormeith argued that the required structure was an algorithm, or any of several algorithms that could be found in several sections of the specification. These sections listed factors such as:

- taking account of circadian and sleep parameters of an individual vehicle driver, and/or
- generic or universal human physiological factors, applicable to a whole class or category of drivers

- behavioural sensing, such as of road condition and driver control action, including steering and acceleration
- common, if not universal, underlying patterns or sleepiness (pre-conditioning);
- exacerbating personal factors for a particular user—driver, such as recent sleep patterns especially, recent sleep deprivation and/or disruption;
- a weighting [of previous factors] according to other factors, such as the current time of day.

Iborneith also argued that Table 10 of the specification (reproduced on page 8 of the opinion) contains an algorithm that may be used as a computational means for weighting or computing.

The district court reserved its ruling on claim construction and indicated that a motion for summary judgment concerning indefiniteness should be pursued as a threshold issue. The parties agreed and the court ruled that the asserted claims were invalid and granted summary judgment for Mercedes.

II. Issue

1. Did the district court err in granting summary judgment for Mercedes and holding that the recited independent claims were indefinite? (de novo)

III. Discussion

1. No. The disclosed algorithm does not adequately define the structure required under 35 U.S.C. § 112(f).

The court gave a fairly concise description of the current interpretation of section 112(f): “Section 112(f) allows patentees to put structural details into the specification and build into the literal coverage of the claim a certain scope for *equivalents* in performing a defined function. The price of using this form of claim, however, is that the claim be tied to a structure defined with sufficient particularity in the specification. For a claim to be definite, a recited algorithm, or other type of structure for a section 112(f) claim limitation, need not be so particularized as to eliminate the need for any implementation choices by a skilled artisan; but it must be sufficiently defined to render the bounds of the claim—declared by section 112(f) to cover the particular structure and its equivalents—understandable by the implementer.” Opinion, page 7.

Most of the time, if you want to use means-plus-function claim construction, it is because you are looking to easily claim a number or ways to do something without listing them all in the claim. The claim will cover “equivalents,” but only of the particular structure listed in the specification. In this case, Iborneith was looking to use means-

plus-function, but also broadly define the list from the specification, and ended up not including sufficient particularity.

The Federal Circuit looked at the specification and saw merely identified factors without any concrete relationship between them that could be used to compute an outcome to warn of driver drowsiness. In particular, the court looked at Table 10 and the apparent addition of factors as a possible concrete example. The report from Iborneith's expert witness, however, precluded this possibility. The report stated several times (listed on pages 9-10 of the opinion) that the factors could be weighted differently, or multiplied rather than added to come up with the final Sleep Propensity Factor. The court also quoted Mercedes' expert that "a person of ordinary skill in the art 'would need to devise his or her own method for determining driver drowsiness based on the factors generally disclosed in Tables 10, 11, and 12.'" Opinion, page 11.

IV. Conclusion

The Federal Circuit concluded that a "description of an algorithm that places no limitations on how values are calculated, combined, or weighted is insufficient to make the bounds of the claim understandable." The court listed a few other means-plus-function cases that concerned algorithms and differentiated those based on concrete examples given in each. The judgment of the district court was affirmed.

35 U.S.C. §112(f) (formerly §112 paragraph 6):

(f) Element in Claim for a Combination.— *An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.*

FYI: As a result of reexamination requested April 2, 2012 (23 days before the claim construction hearing), this new claim was added (markups in relation to claim 1):

10. A sleepiness monitor for a vehicle driver, or machine operator, comprising:
- a sensor for sensing a driver or operator control input, wherein said sensor is for sensing steering transitions about a reference position;
 - a memory for storing an operational model that includes a pre-loaded physiological reference model of driver or operator circadian rhythm pattern(s) and a vehicle or machine operating model or algorithm;
 - an internal microprocessor specially programmed to incorporate said sensed steering transitions into said vehicle or machine operating model or algorithm and to weight said operational model ~~computational means for weighting the operational model~~ according to time of day in relation to the driver or operator circadian rhythm pattern(s), derive, ~~and~~

~~for deriving~~, from the weighted model, a driver or operator sleepiness condition and produce[[ing]] an output determined thereby; and

a warning indicator triggered by the computational means output, to provide a warning indicator of driver or operator sleepiness, wherein said warning indicator includes a visual warning shown on or through a display screen.