

**Keywords:** Means-plus-function claims, claim construction, claim interpretation, software

**General:** When interpreting a means-plus-function claim, corresponding structure in a patent specification does not include software where only hardware elements are shown and described in the specification and there is no clear indication that would lead one of ordinary skill in the art to understand that software could be used to perform the specific function set forth in the claim element.

*Medical Instrumentation and Diagnostics Corp. v. Elekta AB*

U.S. Court of Appeals Federal Circuit No. 03-1032

Decided September 22, 2003

**I. Facts**

This opinion is likely to be the concluding chapter in a lengthy and heavily litigated dispute between Medical Instrumentation and Diagnostics Corp. (“Midco”) and Elekta AB (“Elekta”). Midco owns two patents (the ’846 and the ’684 patent), which relate to producing body images from multiple sources. The images are used to perform stereotactic surgery, which is surgery on an object that is hidden from view. In stereotactic surgery, a three-dimensional coordinate system is used to locate tumors and a surgeon operates based on a graphical representation of the tumor.

Midco initially brought suit for infringement against Elekta and obtained summary judgment that the ’684 patent and the ’846 patent were not invalid. At a Markman hearing, the district court provided a claim construction for the relevant claims, which apparently all included means-plus-function limitations. The particular limitation at issue in this case is a “means for converting said plurality of images into a selected format.” The only corresponding structure in the specification was a framegrabber video display board and a computer video processor. The parties agreed that there was no corresponding structure to the framegrabber and computer video processor in Elekta’s accused devices. Instead, the accused devices employed software to perform a digital-to-digital image conversion. Nonetheless, the district court also equated software routines for converting digital-to-digital images known to those of skill in the art to the means for converting.

At trial, a jury found Midco’s patents infringed and awarded \$16 million in damages. Elekta subsequently filed motions for judgment as a matter of law (JMOL) based on the district court’s claim construction. Those motions were denied, and this appeal followed.

**II. Issues**

- A. Did the District Court correctly interpret the “means for converting” limitation in Midco’s claims?
- B. What specific factors should a court consider in determining whether structure is sufficiently linked to a function specified in a means-plus-function claim?

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### III. Discussion

- A. No. The district court erred by including software capable of performing image conversion as structure equivalent to the claimed “means for converting.” The court explained that the first step in construing a means-plus-function claim element is to identify the particular claimed function. The second step is to look to the patent specification for identification of structure corresponding to that specific function. The court stated: “under this second step, structure disclosed in the specification is ‘corresponding structure’ only if the specification or prosecution history clearly links or associates that structure to the function recited in the claim.” (Internal quotation marks omitted).

The court pointed out that Midco’s patent specification specifically identified structure only sufficient to convert images from analog-to-digital format, not from digital-to-digital format and that this structure did not include software. The court reached this result despite the fact that software was indicated as corresponding structure for functions set forth in other means-plus-function claim elements. The court cited the duty of the patentee “to clearly link or associate structure with the claimed function as the *quid pro quo* for allowing the patentee to express the claim in terms of function under § 112, paragraph 6.”

- B. The court discussed evidence with respect to five specific areas in reaching its conclusion:
1. The figures of the patent specification.
  2. Text in the patent specification that relates to the figures.
  3. Text that describes a linkage between a claimed function and express structure.
  4. Expert testimony.
  5. Prosecution history.

The court indicated that the requisite linkage between function and corresponding structure might be found in any of these areas. With respect to item 1 (the figures), Midco argued that a box in Figure 1 labeled as “image format conversion” corresponded as software structure to the claimed means for converting. Rejecting Midco’s position, the court noticed that the box referred to was from a figure representing a method embodiment, not a structural embodiment. The court pointed out that Midco had failed to include a software embodiment as a separate embodiment to link the means for converting to software as structure.

With respect to the second factor (description of figures), Midco argued that the description of a figure representing a method embodiment referred to image format conversion. Thus, Midco contended that the claimed means for converting element was linked to software. The court rejected Midco’s contention stating that “[t]here is no evidence that one skilled in the art would understand the phrase [cited by Midco] to refer to software for digital-to-digital conversion.”

With respect to the third factor (text in the specification), Midco cited places in the specification that referred to modular software routines for a plurality of functions, including image editing. Never, however, did the patent specification clearly indicate that software could be used for performing the converting function. Again, the Federal Circuit rejected Midco’s contention, noting that the specification provided clear links showing that software corresponded to other functions, but not the claimed converting function.

With respect to the fourth factor (expert testimony), Midco contended that it provided testimony to the effect that image conversion software was well known to those of ordinary skill in the art. The court pointed out that, even though such programs were known to those of ordinary skill in the art, the legal requirement of a clear linkage between a specifically

claimed function and software was not present. The court stated that “[t]his may be a different case if the specification contained a statement suggesting that digital-to-digital conversion can be performed by software programs known to those of skill in the art.” The court again emphasized the public notice function stating that “[t]here must be something in the disclosure to indicate to the public that the patentee intends for a particular structure to correspond to a claimed function.”

With respect to the fifth and final factor (prosecution history), the court quickly concluded that nothing in the prosecution history provided a clear link between the claimed means for converting and software. Thus, the court reversed the judgment of infringement by Elekta and held that Elekta was entitled to JMOL of non-infringement.

### **Dissent**

Again, the lone voice of dissent, Judge Newman weighed in arguing that the testimony of both sides indicated that software routines for digital-to-digital conversion are within routine skill. Judge Newman contends that this should be sufficient basis for allowing the patentee to expand the scope of a means-plus-function limitation with no specific linkage between a claimed element and corresponding structure. Her reasoning is tantamount to allowing a patentee, by virtue of a boilerplate expression that other embodiments and details are known to those of ordinary skill in the art, to expand the scope of any claimed means-plus-function limitation well beyond that set forth with specificity in the specification. When you do use means-plus-function claims, make sure you have covered the bases for corresponding structure in your specification.

### **IV. Conclusion**

This decision seems to be one of the Federal Circuit’s better efforts in a while. The decision is well reasoned and authoritatively documented with relevant case law. For the prosecution practitioner, the message seems exceedingly clear: Don’t put only means-plus-function claims in your patent! When you do use means-plus-function claims, make sure you have covered the bases for corresponding structure in your specification.