



perform tests or developments that go beyond routine trials (*Halliburton Energy Services Inc v Smith International (North Sea) Ltd* [2006] RPC 2). The position is summed up neatly in *Novartis AG v Johnson & Johnson Medical Ltd* [2010] EWCA Civ 1039, where the Court of Appeal upheld a finding of insufficiency because “the instructions do not enable the skilled person readily to perform the invention over the whole area claimed without undue burden and without needing inventive skill”.

- 6 I also note that guidance was given by the House of Lords in *Kirin-Amgen Inc v Hoechst Marion Roussel* [2005] RPC 9, where it was held that the first step in determining whether the specification is sufficient or not was to identify the invention and decide what it claimed to enable the skilled man to do. It was then possible to ask whether the specification enabled him to do it.
- 7 I did not detect, in the written exchanges between the examiner and the applicant, any disagreement over the principles relating to sufficiency set out in case law. The matter in dispute relates to whether the application, on the facts, satisfies the legal requirement for sufficient disclosure, as interpreted by the courts.

### **Arguments and analysis**

- 8 The examiner maintains that the application does not sufficiently disclose how the lens system is able to project a three-dimensional image of the electronic book content. His position is set out in his examination reports of 12 August 2014 and 29 August 2014. The applicant’s arguments are contained in his responses of 12 August 2014 and 31 August 2014, the latter of which was accompanied by some technical drawings.
- 9 What I must do is determine, in light of this material and the arguments before me, whether the specification discloses the invention in a sufficiently clear and complete way, within the meaning of the relevant law.

### *Identifying the invention*

- 10 An amended set of claims was filed on 4 August 2010. It comprises one main independent claim which reads as follows:
- A Lens based electronic book reading system for accessing digital literary content via a bespoke set of Lens, wherein the Lens receives transmitted data from a handheld reader device, the electronic book reading system comprising: (a) a set of ear hinged lens or contact lens for reading the digital literary content as a projected 3 dimensional display of information, (b) a handheld reader device for accessing the information stored online or encoded on cartridges prior to transmission wirelessly to the bespoke Lens and (c) cartridges containing encoded digital literary content.*
- 11 The invention identified by claim 1 is therefore an electronic book reading system for accessing digital literary content via a bespoke set of lenses, which may be “ear hinged” or contact lenses. The lens or lenses receive data which is wirelessly transmitted from a handheld reader device, and they enable the user to read the digital literary content as a projected three-dimensional display of information. The handheld reader device accesses the data to be transmitted either online or via cartridges containing encoded digital content.

- 12 Claims 2 to 57 set out certain specific features of the system of claim 1. While these claims do not appear to be strictly dependant on claim 1, the features that they set out fall within the scope of the invention as claimed in claim 1.
- 13 Thus claims 2-9 are directed to specific features of the “eBook Lens”, claims 10-32 refer to specific features of the “eBook Reader Device” and claims 33-36 cover features of the “eBook Cartridges”. Specific features concerned with user authentication are set out in claims 37-40, data processing in claims 41-45, data storage in claims 46-47, and communication modes in claims 48-57.

*What the invention claims to enable the skilled man to do*

- 14 The issue of who the skilled man might be in this case does not appear to have arisen. But it seems appropriate to me if he is considered to be a reasonably highly-qualified technician working in the field of portable “smart” devices and with a particular interest in mechanisms for rendering content visually and/or remotely from those devices (for example, through head-up displays or through stereoscopic or three-dimensional effects). That person would be familiar with many of the properties of such devices, the way in which they connect to and process information, the standards under which they operate, and so on.
- 15 In any event, there does not appear to have been any disagreement between the examiner and the applicant about what the invention claims to enable the skilled man to do. I do not think there is any difficulty in identifying this. The invention claims to enable the skilled man to construct an electronic book reading system in which literary content is transmitted wirelessly from a device to some form of lens arrangement in front of the user’s eyes, such that a projected three-dimensional display of the content is created for the user.

*What the specification enables the skilled man to do*

- 16 The specification comprises a five-page description which sets out the features of the “eBook Reading System”, and a number of drawings. The examiner says that it provides very little detail and largely comprises a list of features ascribed to the invention. He says that references to “nano technology circuitry” and “nano technology based power storage” are lacking in any information as to what these are or how they work.
- 17 In particular, the examiner’s view is that it is unclear how the three-dimensional display is achieved by the lens arrangement, since the ability to render a three-dimensional image is “highly technical” and the skilled person would require more detail in order to be able to achieve this in the way set out in the claimed invention. For example, the examiner says that a skilled man would need answers to questions such as “how do the lenses project an image?” and “how does the nanotechnology translate the content into a 3D view?” in order to be able to work the invention.
- 18 The applicant says that, while the specification does not provide all the details required to develop the product embodied by the invention, it does provide sufficient details for this to take place. In particular, he says that there is sufficient detail of the components of the invention and the interoperation of those components for the disclosure to be enabling.

- 19 In setting out the features of the system, the description groups certain features together. It starts by referring to “Touch Screen Interfaces”. These are said to comprise a touch screen keypad, scrolling pad and/or power status bars which confirm to the user the status and operation of communication ports and other matters.
- 20 Next comes “Battery Power”. The description refers to the system having a lightweight lithium ion battery for distributing power to the device’s components, and also a “Nano Technology based battery”. The discussion of this latter battery is this:

*Miniature transparent power storage designed to distribute electric power to the nano technology components of the eBook Lens during use; following charging sessions within the charging pod.*

- 21 The description goes on to list a large number of features ascribed to the hand-held electronic book reader device. Many of these would be familiar to users of a smartphone or internet-connected tablet device at the priority date of the invention. For example, the device is said to have a web camera, voice recognition, a speakerphone, mute switch, various input and output ports and cartridge slots, and also 4G, Bluetooth<sup>RTM</sup> and Wi-Fi connectivity. The device is also said to have an “Audio Visual Signal Transmitter Adapter” and “Audio Visual Signal Transmitter switch”. The description just says the following in relation to these:

*Audio Visual Signal Transmitter Adapter: For enabling the wireless transmission of audio visual signals from the device to television sets and video projectors.*

*Audio Visual Signal Transmitter switch: Biometric (fingerprint) based activation for on or off functions.*

- 22 I also note the drawing of the reader device in figure 1. It contains dotted-line circles, rectangles and squares which represent the various features listed (battery, ports, control buttons, Wi-Fi transceiver etc). The drawing reflects the description by showing that these things are features of the device. But there is nothing showing how the features interrelate or connect to one another. The “Audio Visual Signal Transmitter Adapter” is shown as a small square within the device. The related switch is shown as being somewhere on the side of the device.

- 23 The description then turns to the features of the “eBook Lens” itself. The details given are as follows:

*Transparent Nano Technology Circuitry: Micro circuitry for supporting the activities of the data processor(s) or central processing unit (CPU) in executing the Lens’ processes.*

*Transparent Nano Technology based power storage: Micro component battery for storing and distributing DC electric power to the micro circuitry above.*

- 24 The other features of the lens are a flexible frame and a non-conductive external protective shell. Figure 3 contains a depiction of the lens(es) but these are shown either as two plain circles or as a simple pair of glasses. There is a reference to the nanotechnological circuitry and battery, but the arrow simply points approximately to the middle of the circular lenses.

- 25 The description goes on to refer, in fairly brief terms, to a “miniature rectangular plastic charging device”, a USB connection, and the “eBook cartridges”. An outline drawing of a cartridge is given in figure 2, and a simple depiction of a rectangular charger with circular enclosures is shown in figure 3.
- 26 The description then proceeds to list a few materials used to manufacture the product, and gives overall dimensions for the reader device, lens, cartridges and charging pod. Finally, there are some non-technical statements at the end about estimated production and retail costs, the legal status and developmental stage of the invention, and other matters.
- 27 Having reviewed the specification carefully, I note in particular the following points:
- i. The brief reference to the “Audio Visual Signal Transmitter Adapter” contains no technical information other than a statement that it is wireless. The drawing of the reader device gives no further detail or assistance, as discussed above.
  - ii. The brief references to the lens having transparent nanotechnological or miniaturised circuitry and power storage appear to be no more than speculative statements that such arrangements could somehow provide the capability of the claimed invention. As noted above, figure 3 gives no information about the lenses beyond the fact that they are circular and may be in the form of a pair of glasses. There is a complete absence in the description or drawings of how such nanotechnological or miniature structures could be created within the lens or lenses, made transparent, and operated to create a three-dimensional projection.
  - iii. Figure 4 shows in general terms a pair of circular lenses located in front of a person holding the reader device. A drawing of a projected image is shown as being projected by the lenses in front of that person, but there is no technical detail shown as to how this is achieved.
  - iv. The list of conventional materials used for construction do not get matters any further forward. The materials mentioned are conventional and high-level (“Plastic, Fibre Glass, Metal Alloys, Rubber, Silicon” for example).
  - v. The dimensions given for the lens say that it is circular, of two possible diameters, and with a particular (apparently uniform) thickness. This falls some way short of giving realistic technical information about a lens said to encompass nanotechnological circuitry and to be capable of leading to projection of a three-dimensional image for a user.
- 28 The specification therefore lacks any technical explanation of how data is transmitted wirelessly and received by a lens arrangement. Nor is there any discussion of how content is projected as a three-dimensional display by the lens arrangement. In these respects, the specification has no meaningful technical disclosure which could amount to a teaching for the skilled man.
- 29 Although I think this is the case when the specification is considered on its own terms, my view is reinforced by the prior art documents cited in the first examination report. These show various systems for transmitting digital content from devices to glasses of some type. The glasses may contain separate LCD screens for left and

right eyes and so potentially could render a stereoscopic image. But there would clearly be a significant technical leap in replacing LCD screens with transparent glass lenses which contained nanotechnological circuitry and had the ability to project a three dimensional image. The specification gives the skilled man no technical assistance in making that leap.

- 30 For these reasons, I am not persuaded that the disclosure of the specification would enable the skilled man to construct, without undue burden or inventive skill, an electronic book reading system in which literary content is transmitted wirelessly from a device to a lens arrangement, with a projected three-dimensional display of the content created for the user.
- 31 I should also address the applicant's reply of 31 August 2014, in which he encloses technical drawings said to be developed in November 2010 using the disclosure contained in the specification. He argues that the product development firm was able to produce these technical drawings, from which a prototype of his device can be developed, and so a person skilled in the art could develop a prototype from the disclosed features of the invention.
- 32 I accept that the product development drawings may well have been done on the basis of the specification. They show the concept of the electronic book reader device, cartridge, glasses and charging base in more design detail than shown in the specification itself. But I do not agree that these drawings show that a working prototype could be developed. They do not provide any evidence to demonstrate that the three-dimensional projection of content transmitted wirelessly from a reader device has been enabled, or could be enabled, by the specification's disclosure. They do not alter my view that the disclosure of the specification is insufficient.

### **Conclusion**

- 33 The specification of the application does not disclose the invention in a manner which is clear enough and complete enough for the invention to be performed by a person skilled in the art.
- 34 Since the only way to make the disclosure sufficient would be to add significant technical matter by way of amendment, and this is not allowable, it follows that no saving amendment is possible. The application is refused under section 18(3).

### **Appeal**

- 35 Any appeal must be lodged within 28 days.

**Dr J E PORTER**

Deputy Director acting for the Comptroller