Neutral Citation Number: [2012] EWCA Civ 7

Case No: A3/2011/0756 and 0793

IN THE COURT OF APPEAL (CIVIL DIVISION)
ON APPEAL FROM THE HIGH COURT OF JUSTICE
CHANCERY DIVISION (PATENTS COURT)
MR JUSTICE FLOYD
[2009] EWHC 418 (Pat) and [2011] EWHC 426 (Pat)

Royal Courts of Justice
Strand, London, WC2A 2LL

Date: 24/01/2012

Before:

LORD JUSTICE ELIAS
LORD JUSTICE KITCHIN
and
SIR ROBIN JACOB

- -

Between:

MMI RESEARCH LTD	**Claimant/ Respondent**
- and -	
(1) CELLXION LTD **(2) CELLXION NETWORKS LLC** **(3) MARK BRUMPTON** **(4) DATONG ELECTRONICS PLC** **(5) ROHDE & SCHWARZ GMBH & CO KG** **(6) ANTHONY TIMSON**	**Appellants/Defendants**

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- -

Mr Alastair Wilson QC and Mr Simon Malynicz (instructed by Addleshaw Goddard LLP)
for the Appellants/Defendants
Mr Martin Howe QC and Mr Henry Ward (instructed by Charles Russell LLP)
for the Claimant/Respondent

Hearing dates: 22nd and 23rd November 2011

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Judgment

Sir Robin Jacob:

This is the judgment of the Court to which we have all contributed.

We have before us two appeals from judgments of Floyd J which were called "the main judgment" ([2009] EWHC 418 (Pat)) and "the remitted issues judgment" ([2011] EWHC 426 (Pat)). The latter involved the consideration of fresh evidence which, it was alleged, undermined the Judge's original decision.

By the main judgment Floyd J held that EP (UK) 1 051 053 was valid and infringed. By the remitted issues judgment he held that the patent was valid and was unaffected by the fresh evidence.

The patent is for so-called "IMSI catchers". These are devices used by the police and security services to discover the mobile phone numbers of suspected criminals or terrorists. Every mobile phone has an "IMSI" associated with its SIM card, which is its permanent identity number. It used to be thought that the IMSI of the mobile phone could not be identified. Security services and police have a strong interest in being able to discover it; they can then track the phone and keep tabs on the owner as he moves from place to place.

For the purposes of understanding this appeal, it is sufficient to draw attention to two particular features of the IMSI catcher claimed in the patent. The first is that it involves the creation of a false base station. Mobile phones in a particular area will transmit information to a base station which operates as a transmitter and a receiver to and from the phones. The IMSI catcher uses a false base station which is constructed in a manner which leads the phone to believe that it is genuine, and thereby to communicate with it. It is accepted that this was an ingenious and potentially patentable idea but it was in the public domain before the priority date (3 May 1999).

The second feature is the way in which the fake base station causes a mobile phone speedily to transmit to it. In the normal way phones only link to a base station periodically. The IMSI catcher of the patent works so successfully because it is able quickly to capture the IMSI of the mobile phone. A mobile phone will send a signal when it moves from what is termed one location area code ("LAC") to another. The country is split into different LACs with a number of base stations located in each LAC. Usually transmission will occur because the phone has physically transferred from one area to another, and when it enters a new LAC it will send a signal to the nearest or most powerful base station. The trick here is to cause the phone to believe that it has moved into a new LAC and therefore communicate with the false base station and deliver up its IMSI. This is achieved by giving the fake base station a different LAC to that of the area where the mobile phone is located.

Essentially, the principal issue in this case is whether the idea of providing a different LAC to catch the IMSI was obvious or not, given that the principle of the fake base station was known.

The patent stands in the name of Rohde & Schwarz ("R&S"), who are named as 5th defendants but who played no active part in the proceedings. The claimant, MMI, is an exclusive licensee under the patent. For the purposes of the present judgment it is not necessary to distinguish between the various defendants save in relation to the

question of the personal liability of the sixth defendant, Mr Timson. We therefore refer to them (other than R&S) together as CellXion.

The Judge set out the detail of the specification at [8-15]. For brevity and because we do not think this case has any general interest, we need not repeat it here.

The only relevant claim is claim 1 which reads:

> "Method for identifying a mobile telephone (MS) in a public digital cellular mobile telephony network,
>
> a virtual base station (VBTS) with a test mobile telephone (TMS) connected thereto being operated in spatial proximity to the mobile telephone (MS),
>
> the network base station (BTS1), assigned to the selected location, having the highest power being used to ascertain, through a cell monitoring by means of the test mobile telephone (TMS), the list (BA) of all base stations adjacent to the location,
>
> there being selected therefrom a base station (BTS2), which is adjacent to the base station (BTS1) of highest power assigned to the selected location,
>
> and the virtual base station (VBTS) being then operated on its channel frequency (BCCH) with a power which, at the mobile telephone (MS), is greater than that of the network base station (BTS1) associated with the location,
>
> and with an area code which differs from the area code (LAC) associated with the location."

The Judge set out the common general knowledge of the person skilled in the art at [24-46]. Again we do not set it all out here. Neither side challenged any of this, save that Mr Wilson QC submitted the Judge should have made it clearer than he did that the knowledge of mobile phone testing equipment which he set out at [37-39] would have been known to the "person skilled in the art" concerned with the problem of designing an IMSI catcher at the priority date.

Before the Judge the defendants took a mass of points. A group of these related to a prior use of the R&S GA-900 machine and its manuals. It was contended that these were novelty destroying in that they made the invention available to the public. It was not disputed that sales of the GA-900 took place and did so before the priority date. But it was said that (a) it was not proved that an inspection of the machines would reveal how they worked and (b) that in any event the sales and disclosures were under a seal of confidence. The Judge so held.

Following the main judgment an application was made to the Court of Appeal to admit fresh evidence concerning the prior sales of the GA-900. This was admitted and particular, tightly defined, issues were remitted to the Judge to determine. Those formed the subject of the remitted issues judgment. Thus both the main judgment and the

remitted issues judgment were concerned with the allegation of lack of novelty by reason of the prior sales of the GA-900. We turn to that issue first.

Anticipation by prior use or disclosure

Introduction

At the original trial CellXion relied upon the sale by R&S of the GA-900 machine and its instruction manuals before the priority date to security services around the world. It was common ground that the method of operation of the GA-900 fell within claim 1 of the patent. The issues before the Judge were therefore whether the GA-900 or its instruction manuals were supplied; whether such supply was without a fetter of confidence; and whether such supply amounted to a disclosure of claim 1.

The Judge found that supplies of the GA-900 were made to the Australian Government and to a person identified only as "B" before the priority date. However, he also found that the circumstances of the supply were such as to impose on the Australian Government and on "B" an obligation of confidence in relation to any information derivable from the machine as to how it worked. As for the GA-900 manuals, the judge found that if they were supplied, then they were impressed with an obligation of confidence too.

The Judge also addressed the question as to whether the supply of the machine amounted to a disclosure of the invention in any event. He concluded that it had not been established that it did. He put it thus:

> "96. The question of what the prior sale was capable of revealing to the skilled person was not a matter addressed in the evidence at all. I do not think it would be right for me to conclude without evidence that the relevant features of the method of operation according to the Patent would be apparent to the purchaser of the GA-900 from the machine or its instruction manual. "

CellXion claimed to have been supplied, after the main judgment, by an anonymous source with a brown envelope containing a file in English ("the English File") and a manual in Italian (the "Italian Manual"). The English File also contained a certificate of compliance with a sales order and a floppy disk. These contained dated materials which led CellXion to believe they must have been supplied before the priority date together with GA-900 machines, and that a recipient would have had no difficulty in understanding from them precisely how the machines worked. Armed with this new material they made an application to this Court (Jacob LJ and Kitchin J) for permission to appeal and for permission to adduce further evidence.

This Court decided ([2009] EWCA Civ 1120) to admit the new evidence and to remit the matter to the Patents Court to try the new issues it raised. Jacob LJ described the nature of the new material in these terms at [4] and [5]:

> "4. Two files (and we have seen the originals) are the instructions for the device in Italian and another file, rather thicker, with almost the same instructions in English. They were manuals. Along with the English version at least, is a

> floppy disk which has recently been read. There can be no doubt, and I do not think Mr Howe disputes it, that if this manual or the floppy disk had been prior disclosed to someone who was free in law and equity to use the information, the patent would lack novelty.
>
> 5. Mr Wilson particularly relies upon what he says is fairly obviously an event prior to the priority date of the patent, a certificate of compliance with an order from Rohde & Schwarz to a customer. The customer is not named but the order number is given and the document, which came in the English file, is dated 18/03/1998, which was before the priority date. Mr Wilson says the clear inference is that the recipients of this machine would have got the manual to go with it, that the document we have here is the manual that goes with it, that there is nothing about the manual being confidential, and that, accordingly, the recipient was a person free in law and equity to use the information. Likewise he says that the accompanying floppy disk also, when read, contains sufficient information to amount to an anticipation of the patent if it was part of the prior art. And the dates of the files on disk are all before the priority date."

CellXion said at that hearing that they had made efforts to authenticate the English File and the Italian Manual. Specifically they said that they had contacted two government security officers, one in Italy and one in Germany, who said they had received training materials like these before the priority date.

Jacob LJ also explained what was to be done, at [10] and [11]:

> “10. So I would admit the fresh evidence. I will also require that the defendants plead exactly what it is they intend to prove. Speaking generally it seems to me it is the following. (1) the prior sale to the customer who is named on the certificate of compliance with the order together with the supply of the training manual. I would not allow the issue of whether you can work out what the machine does from the machine itself to be re-opened. (2) the supply of manuals to the Italian and German security officers. (3) I would also allow, to this extent and this extent alone, the issue of the Australian supply to be re-opened but with no further evidence from Australia. All that can be raised is the question of the inference to be drawn from the existing evidence in the light of the further evidence which comes before the judge.
>
> 11. All these matters would have to be pleaded out with considerable precision. Any further amendment must be regarded with utmost suspicion and only allowed in the most exceptional circumstances."

This Court therefore made the following order:

> "1. By 4 pm on 30 October 2009, the First to Fourth and Sixth Defendants shall serve on all the other parties a Re-Amended Grounds of Invalidity setting out precisely the nature of the said Defendants' prior use case based upon the following:
>
> (a) The prior sale to the customer as allegedly evidenced by the certificate of compliance that was shown to the Court, together with the alleged supply of the Rohde & Schwarz GA 900 Manual and/or disk;
>
> (b) The alleged supply of Rohde & Schwarz GA 900 Manuals to the Italian and German security officers identified in the Fifth Witness Statement of the Sixth Defendant.
>
> 2. The aforesaid Re-Amended Grounds of Invalidity shall not be amended save in the most exceptional circumstances.
>
> 3. The said Defendants to have permission to adduce fresh evidence relating solely to their case identified in the aforesaid Re-Amended Grounds of Invalidity
>
> 4. By 4 pm on 13 November 2009 the Claimant do serve a Re-Re-Amended Reply and Defence to Counterclaim (if so advised).
>
> 5. The claim be remitted to the Honourable Mr Justice Floyd for further directions and for a hearing on the issues identified in the pleadings referred to at paragraph 1 and 4 of this Order ("the remitted issues"), and for reconsideration of the issue of prior use in Australia having regard only to the evidence already given at the trial together with the facts (if they be established) that the Manuals and other material referred to above were supplied to customers (including the German and Italian personnel referred to above) without being marked with an indication of confidentiality, and such other inferences as may properly be drawn therefrom.
>
> 6. The issue of whether a user can work out what is the GA 900 machine does from the machine itself is not to be re-opened."

Note that the order required CellXion's re-amended pleading to set out with precision the case on prior use based upon the prior sale as evidenced by the certificate of compliance and the case based upon supply of the English File and the Italian Manual to the Italian and German security officers. Moreover, it strictly circumscribed the remitted issues to those raised by the re-amended pleading and to a reconsideration of the prior use in Australia having regard only to the evidence at trial and the new materials, and the inferences properly to be drawn from them. Importantly, the issue of whether a user could work out how the GA-900 worked from the machine itself was not to be re-opened.

CellXion duly re-amended their pleading to introduce the following allegations relevant to this appeal:

> "(v) The prior sale of the GA 900 as evidenced by the Fifth Defendant's "Certificate of Compliance with the Order" dated 18 March 1998 … together with the prior publication of a training manual and/or a computer disk by supply therewith, and the prior publication by training using the manual and/or disk;
>
> (vi) The prior publication of a training manual for the GA 900 (accompanied, it is to be inferred by a GA 900) by supply of such to the Italian carabinieri and the prior publication by training using the said manual as evidenced by a statement of the member of the carabinieri dated 22 July 2009 …
>
> (vii) The prior publication of a training manual for the GA 900 (accompanied, it is be inferred by a GA 900) by supply of such to the German Federal Criminal Police ('BKA') and the prior publication by training using the said manual as evidenced by the fifth and sixth witness statements of the Sixth Defendant;
>
> …..
>
> (ix) Further it is a proper inference that the circumstances of prior sale (including the supply of a training manual) of the GA-900 to the Australian Department of Defence on 15 April 1998 were also made without fetter of confidence."

In his remitted issues judgment Floyd J found the case based upon the new materials failed.

As for the sale of the GA-900 evidenced by R&S's certificate of compliance, the Judge found that a GA-900 test machine was supplied to the Italian Carabinieri on 19 March 1998, that is to say before the priority date. Indeed that was hardly disputed. The real issue was whether it was accompanied by the Italian Manual, the English File or the floppy disk.

The Italian Manual was addressed by the Judge at [24 -25]. He found that it was produced after the priority date and therefore could not provide any basis for a case of prior disclosure.

The English File raised more issues. It was not a single coherent document but comprised a series of different sections with different dates, one of them being a "manual" which described a "set LAC" button feature. The Judge held:

> "33. For reasons I have already alluded to the English File is not a coherent document in the same way as the Italian Manual. It is not the sort of document one would expect to be issued with a new machine. The evidence established that all the pages had been photocopied at the same time in a rather poor quality fashion, although there is no way of telling when.

> It is plainly not the document supplied with the machine. The nature of the document cries out for an explanation, which, as will be seen, I never received. ”

At [44], the Judge expressed his overall conclusions in these terms:

> “44. My conclusions about the English File based on the documents themselves are therefore these:
>
> i) it is an incoherent assembly of documents, unlikely to be one which was supplied with a new machine;
>
> ii) it could not have been supplied with the machine sold and delivered to the Carabinieri in March 1998;
>
> iii) it was compiled after May 1998: how long after is not established;
>
> iv) it provides no internal clues as to whether it was published before the priority date.”

The Judge was also very concerned about the provenance of the English File. The evidence on this issue was given by Mr Timson. The Judge found his evidence contradictory and less than frank and, in the end, was left to speculate what the English File really was, how the collection of documents it contained came to be put together and how the file came to arrive in CellXion’s offices.

The floppy disk was tucked into a pocket of the English File. It contained a number of files which were placed on the disk in 23 April 1998, after the date upon which the machine was supplied to the Italian Carabinieri. However, one of them, a “help” file, was created in January 1998. Calibration data on one of the files corresponded to the serial number in the test report attached to the certificate of compliance. For these reasons the Judge held that the disk was supplied for use with the machine supplied to the Italian Carabinieri but the evidence did not establish when it was supplied. As the Judge said:

> “[38] The floppy disk is therefore tied to my satisfaction to the pleaded machine supplied to the Carabinieri, in the sense that it was supplied for use with that machine. The real question, and the one which the evidence does not give an answer to, is when it was supplied, as it cannot have been supplied with the machine.”

Then, at [43], he reached the following overall conclusions:

> “43. So my conclusions on the floppy disk are that:
>
> i) it was created on about 23rd April 1998;
>
> ii) it was not supplied with the machine supplied to the Carabinieri on 19th March 1998;

> iii) there is no evidence as to how long after 23rd April 1998 it was supplied."

At [60] to [64], the Judge drew his conclusions together in relation to the allegations contained in sub-paragraphs (v) and (vi) of the re-amended pleading. As for sub-paragraph (v), he found that neither the Italian Manual nor the English File was supplied to the Italian Carabinieri with the GA-900 machine in March 1998. Moreover, there was no basis for believing that the manual part of the English File was supplied either. Further, the floppy disk was not supplied with the machine and it was not clear when it was supplied. As for sub-paragraph (vi), this was no better. There was no satisfactory evidence as to whether the Italian Carabinieri ever used the English File before the priority date.

The case also foundered on the issue of confidentiality. The Judge addressed this issue at [65 -77]. He concluded that, even if the materials relied upon were supplied to the Italian Carabinieri, they were not free in law and equity to use the information they contained as they wished, and the information they contained could only be passed on to a third party purchaser of the machine if the same obligations of confidence were imposed on that third party.

Finally the Judge dealt with the allegations contained in sub-paragraph (vii) and (ix) of the re-amended pleading. Here his conclusions followed from his earlier findings as to the lack of any evidence authenticating the materials before him. Not did he have any other evidence to show that any of them had ever been used in Germany or Australia. These allegations of prior use and disclosure therefore failed.

The appeal

On this appeal CellXion did not seek to challenge the Judge's findings of fact on the remitted issues. Instead they sought to rely upon the evidence given at the second trial to challenge the Judge's findings at the original trial that it had not been established that the sale of a GA-900 machine would have enabled a user of the machine to discover how it worked and, in particular, whether it would have constituted an enabling disclosure of the invention. They also contended that in the first trial the Judge applied the wrong test of enabling disclosure.

At the hearing of the appeal, we indicated that we had reached the conclusion:

> it was not open to CellXion to rely upon the evidence in the second trial in support of their contention that a user of the GA-900 machine could discover how it worked from the machine itself;
>
> it was not open to CellXion to run a refinement of this argument developed by Mr Wilson during the course of his submissions;
>
> the Judge did not fall into error in the first trial in applying the wrong test of enabling disclosure.

We indicated we would give our reasons in our substantive judgment. They are these.

We begin with CellXion's criticism of the approach adopted by the Judge at the first trial to the issue of enabling disclosure. Mr Wilson argued that where a machine is sold to

someone other than under a cloak of confidence, the purchaser is not limited to possessing and using the machine; he is entitled to investigate it in order to find out how it works.

We accept this submission. However it is not at all clear to us that the Judge applied the wrong test. And even if he did, the insuperable problem facing CellXion is that they adduced no evidence on this issue at the first trial. As we have explained, the Judge found that there was no evidence available as to what a user of the machine would be able to infer as to its operation from its possession or use. In particular he had no evidence as to what tests or enquiries could be carried out or what information they would provide. In our judgment the Judge therefore had no alternative but to find, as he did, that it had not been established on the evidence before him that the relevant features of the GA-900 would be apparent to a purchaser from the machine or from its instruction manual.

Turning to the principal issue, namely whether the evidence at the second trial made good these deficiencies, Mr Wilson submitted that the contents of the English File, the Italian Manual and the floppy disk revealed a lot more than had previously been available to the court about the nature of the machines themselves. Thus, he continued, whether or not the new materials actually accompanied the GA-900 machines sold and supplied before the priority date, they were relevant for a different reason: they were good evidence of what the GA-900 machine itself consisted of at the relevant time, how it worked and how it would be perceived by a user or someone trying to see what it did and how it did it. Further, they argued, in the light of the new evidence, as exemplified by the evidence as to the "set LAC" feature, it was now abundantly clear not only that the machine did function in the manner claimed in the patent, but also that it did provide the necessary means of knowledge.

At the hearing of the appeal, we formed the clear view that this argument was not open to CellXion, and we so stated. Paragraph 6 of the order of this Court of 16 October 2009 expressly prohibited a re-opening of the issue of whether a user could work out from the machine itself how a GA-900 worked. The second trial took place before the Judge on the remitted issues pursuant to that order. At no time did CellXion seek to raise before the Judge at the second trial the argument they sought to deploy on this appeal and CellXion never made any application to this court to enlarge the scope of the permission conferred by that order. Moreover, Mr Howe QC submitted, and we agreed, that to have varied the scope of the permission at this late stage would have been grossly unfair. It directed its own evidence, cross examination and arguments at the second trial to the issues which this Court had remitted and only to those issues. Had we permitted CellXion to re-open the issue of enablement from the machine itself, fairness would have required that MMI also should have the opportunity to adduce its own evidence. That would have required a third trial and it was not something we were prepared to contemplate. If CellXion wished to raise this issue, they should have done so before the second trial and, if necessary, made a further application to this Court at that time to vary the remittal order.

That brings us to Mr Wilson's refinement which he developed during the course of his submissions to us. He argued that irrespective of the Judge's findings in relation to the English File and the floppy disk, he ought to have found that the GA-900 machines supplied to Italy and Australia must have been accompanied by an explanation or document equivalent to the "help" file on the floppy disk whose actual date of supply

remained unestablished. This “help” file, Mr Wilson continued, contains a description of the machine and how it works.

In our judgment, this is another point which was not open to CellXion on this appeal. It was not taken clearly before the second trial in the re-amended pleading and, as a result, MMI did not address evidence to it at the second trial. To have allowed it to be taken on this appeal would therefore have been manifestly unjust to MMI and once again would have required a third trial. Further, despite Mr Wilson’s submissions to the contrary, we did not accept it was ever properly raised in the grounds of appeal to this Court.

We therefore reject the challenges to the decision of the Judge at the first trial on the issue of disclosure by the GA-900 and any associated documentation or floppy disc and to his decision at the second trial on the remitted issues.

The upshot thus far is that both that part of the appeal from the main judgment concerned with the allegation of lack of novelty arising from the prior sales and the appeal from the remitted issues judgment fail.

Obviousness over Fox

Below CellXion ran no less than five (perhaps more) obviousness attacks as well as some anticipation attacks. Only one is left: obviousness over a short article by Dirk Fox published in September 1997 about a year and a half before the priority date of the patent.

The Judge described this in the main judgment and set out the key passages:

> “128. The article records the fact that the German Federal Government had revealed that it planned to operate IMSI catchers. Under the heading "Background" the article explains:
>
> > “In GSM mobile telephone systems, the encrypted transmission to the air interface (between device and base station) prevents mobile phones from being directly tapped. Due to the use of temporary, alternating subscriber identities (TMSI), which is a kind of technical "pseudonym", it is not possible to identify the mobile phone subscriber (or his telephone number).”
>
> 129. Under the heading “Functionality”:
>
> > "IMSI Catchers" are devices that affect a subscriber located in the vicinity like a terrestrial mobile telephone network base station system. Every mobile phone that is switched on within the footprint is automatically registered for this "IMSI Catcher". Subscribers are not aware of such a "disguised" device, because GSM involves only one-way authentication (from the mobile phone to the mobile telephone network). A two-way authentication protocol would prevent this type of

> masqueraded breach, although this is not part of the GSM specification.
>
> To identify a telephone number assigned to a mobile phone, the worldwide unique identity number (International Mobile Subscriber Identity - IMSI) of the mobile phone must be known. The "IMSI Catcher" therefore requires the mobile phone to use the IMSI instead of a TMSI."

We interpolate here to add a passage from Fox not cited by the Judge:

> "However their use does not only affect the subscriber at whose connection a monitoring measure, for example is aimed. Rather the IMSI [catcher, that must be] will identify all subscribers located within the device's radio cell with a mobile phone that is switched on, until the one being sought is found".

Going back to the main judgment:

> "130. Under the heading "Availability" the article continues:
>
> "Rohde & Schwarz (Munich) has developed an "IMSI Catcher" under the name of "GA 900", which enables an IMSI to be identified…. Other manufacturers may now have developed similar devices. "
>
> 131. The article goes on to explain that encryption can be turned off so that telephone calls can be logged unencrypted."

This document is of an unusual type in the context of an obviousness attack. Normally the inquiry is whether the skilled person, using only his common general knowledge and the information in the citation would reach the invention. But Fox says the object of the invention (an IMSI catcher) has been achieved. Moreover it has been achieved by using a "disguised device" which operates "like a terrestrial telephone network base station system."

So the question of obviousness over Fox is not whether the teaching would lead the skilled person to the invention generally. It is more specific: could the skilled person work out how to use a fake base station so as to operate as an IMSI catcher? The person knows it has been done this way, but how?

The Judge approached the problem of obviousness over Fox in two stages, partly because there was a more general attack of obviousness over common general knowledge which he, logically, considered first. He did so at [115-125]. He said in particular:

> "121. Thirdly, the notion of the false base station did not form part of the common general knowledge. I accept that test machines were, in a sense, false base stations, but there is a world of difference between these, and the sort of false base station in the real network necessary for the purpose of the invention.

> 122. Fourthly, the common knowledge does not supply the notion that one should actively provoke the mobile into handing over its IMSI or IMEI.
>
> 123. Fifthly, the use of a changed LAC to provoke an immediate contact from the mobile phone is not an obvious use of that feature. The reason that the mobile phone contacts the network when it receives a new LAC is because it needs to re-register into the new area into which it has moved. The idea of using an out-of-area LAC for the purpose identified in the Patent, when the mobile phone is not in that area, is an entirely different and non-obvious use of the LAC.
>
> 124. Sixthly, given that the analogue system had to wait for a call to be made by the mobile phone, there is significant hindsight involved in assuming that the skilled person would not be satisfied with a system based on the periodic update."

When it came to Fox, the Judge said this:

> "134. Would the skilled person be able, without invention, to proceed from the disclosure of Dirk Fox to a method within claim 1? Certainly this is a more promising starting point than common general knowledge alone, as the skilled team would know that the target was achievable. It is also true that the Fox article gives the reader the notion of a false base station which takes active steps to require the mobile to hand over its IMSI. This is, as Mr Wilson submitted, a significant step forward. On the other hand the skilled person would not know how difficult it was going to be: Mr Timson knew of the R&S machine when he designed the MMI one, yet he still found the overall "opportunity" a difficult one.
>
> 135. Mr Anderson's evidence was that filling in the gaps in the disclosure of Fox would be obvious to the skilled GSM engineer. I found his evidence that the skilled person would know how to insert a false base station into the network convincing. He could, after all, not go wrong if he made the false base station as similar as possible to a real one.
>
> 136. Dr Maile's evidence was that the Fox article was at too high a level to make the invention obvious. He was cross examined with great skill along the lines of the argument which I have set out in the section of this judgment dealing with obviousness over common general knowledge.
>
> 137. In the end I was not persuaded that the method of claim 1 was obvious in the light of Fox. Firstly, there is nothing inherent in the idea of using a false base station to lead one to the idea of an out-of-area LAC. Although the use of LAC in the roaming capability of the mobile phone would be

> known to the skilled team, its use for the purpose indicated in the Patent involves the different idea of an out-of-area LAC, and is not obvious. Secondly, there is nothing in the article to indicate how quickly the device intercepts the IMSI. It follows that the device may wait for a call to be made, as in the analogue system, or use the periodic update facility. Neither leads the skilled person to a device within the claim. Thirdly, the prior analogue systems operated on the basis that a call had to be made: there is nothing in the article to indicate that this is not the case with the devices described."

It was common ground that for an appeal on obviousness to succeed, it has to be shown that the Judge made an error of principle, see *Biogen v Medeva* [1997] RPC 1 at p.45. Mr Wilson submitted that he had indeed done so. The error was that the Judge had overlooked the fact that the experts on both sides accepted that the way to get from Fox to the claim would have been obvious. The evidence was all one way. There was no weighing of conflicting opinions to be done.

Before examining this submission in more detail we should mention what seemed to us to be an essentially sterile dispute about the nature of the skilled man. The Judge made his finding about this early on:

> "21. The Patent is addressed to an engineer with the hardware and software skills necessary to build and operate a virtual base station for collecting the IMSIs and IMEIs of mobile telephones within its footprint. In practice this would be a GSM engineer concerned with the security aspects of the GSM system.
>
> 22. Mr Wilson submitted that the skilled person would be someone familiar with "Mobility Management". Whilst I accept that the skilled person would be familiar with the basic technology which allows a mobile phone to roam in a network, there is a danger in supposing that the skilled person has too close a focus on mobility management, which is not really what the Patent is concerned with."

Although the Judge here is referring to the addressee of the patent itself, he tacitly (and correctly in the circumstances) assumed that the same skilled man (a team) would be the person who tried to work out how, using a fake base station, IMSIs could be captured. Neither side disputed that.

Mr Wilson suggested that the Judge's formulation concentrated too much on the "security aspects of the GSM system." But although he referred to that, it played no real part in his subsequent reasoning. All one has to consider is a team of engineers capable of building a virtual base station with a view to capturing IMSIs. The team would know the matters of common general knowledge which the Judge set out. These would include what Mr Wilson called "tickling" a mobile phone by using an out-of-area LAC to disgorge its IMSI in the context of mobile phone testing (see the Judge's finding that this was common general knowledge of "systems engineers" at [37-39]).

Whether or not Mr Wilson's criticism of the Judge's formulation has substance, what really matters is what the Judge actually found to be common general knowledge. There is a limit to the common general knowledge, in that "the notion of the false base station did not form part of the common general knowledge" (at [121]), but that hardly matters given that Fox clearly supplies that idea. There is also the limit that "the common general knowledge does not supply the notion that one should actively provoke the mobile into handing over its IMSI or IMEI" (at [122]). But that does not matter if that would occur to a skilled team working out how to use a virtual base station to capture IMSIs.

We turn then to the nub of Mr Wilson's case. The key evidence is that of Dr Maile, MMI's expert witness. For the evidence of CellXion's expert, Mr Anderson, was to the effect that claim 1 was obvious, as the Judge recorded:

> "135. Mr Anderson's evidence was that filling in the gaps in the disclosure of Fox would be obvious to the skilled GSM engineer."

Dr Maile in his expert report asserted little about Fox specifically. All he said (in the context of claim 1) was that Fox was "a high-level description of what the device does with little detail" and that the steps from this document were not obvious to the skilled team.

But in cross-examination he conceded much – so much that we read his evidence as accepting that given the idea of using a virtual base station one would arrive at claim 1. The Judge accepted that most of the steps involved would occur to the skilled team. He said:

> "[135] ….I found his [i.e. Mr Anderson's] evidence that the skilled person would know how to insert a false base station into the network convincing. He could, after all, not go wrong if he made the false base station as similar as possible to a real one."

Once the skilled team gets that far, the key question therefore resolves itself into whether the idea of using an out-of-area LAC for the virtual base station would occur to the team.

Mr Wilson submitted it would inevitably do so. After all the team would know that the station had to have a LAC. So it would have to put its mind to what that should be. There are only two possibilities, in or out-of-area. As soon as you think about that you would realise that an out of area LAC would provoke a response from all the mobiles within range of the fake base station.

Moreover, submitted Mr Wilson, Dr Maile so conceded in cross-examination. First Dr Maile accepted that Fox would be taken seriously: it said an IMSI catcher had been made by using a false base station.

Next Dr Maile further accepted that to make a false base station work the skilled team would appreciate it had to communicate with a target mobile – which meant that its signal had to be stronger than that of the real base station in whose cell the mobile was. So

what matters really is the last step, the idea of using an out-of-area LAC to provoke a response.

As to the importance of LAC in mobile telephony, the cross-examination of Dr Maile went like this (Day 2/30):

> "Q. … Anyone involved with the design of GSM mobile systems must have been thoroughly aware of the significance of the location update procedure?
>
> A. It would be. It is part of the specification, yes.
>
> Q. But it is more than that. We are looking at certain pages in the specification, but these are fundamental pages in the specification, are they not? This is how every mobile phone performs all the time?
>
> A. Yes.
>
> Q. So this is an important part of the specification with which any GSM engineer would be thoroughly familiar?
>
> A. A systems engineer would be familiar with it, certainly. Absolutely.
>
> Q. This is absolutely basic to mobility management?
>
> A. Yes."

Dr Maile accepted that changing the LAC was a well-known procedure to get data out of a mobile phone in the circumstances of testing. It would in particular be known to a "systems engineer" – though perhaps not to a "technician" not familiar with the specifications for mobile phones. It is quite clear that a "systems engineer" in Dr. Maile's sense of someone knowing about the specification would form part of the skilled team. The technician referred to is clearly irrelevant.

But the most crucial parts of the cross-examination went as follows (Day 2/106-7):

> "Q. Dr Maile, what I put to you is this, that the key step here, the real invention in all of this, was the idea of spoofing a base station. That was what differentiated these machines from what had been done with analogue technology? That was what really made these things work. Everything else was detail which anybody in the industry could fill in. But given the notion of a spoof base station, everything else inevitably followed, is that not right?
>
> A. I certainly agree that it is a key step, yes.
>
> Q. Not only is it a key step but once you have got that key step everything else, inevitably, follows? Well, subject to the point about the periodic update instead of the location area

> update, and subject to the point about using maps instead of the BA lists supplied to by mobile phone aerials/base stations, subject to those two points, given the idea of a spoof base station, claim 1 follows inevitably?
>
> A. If you put the right steps in place in the right order, yes.
>
> Q. We have been through that. You cannot put them in any other order. You have to put them in that order. Claim 1 follows inevitably?
>
> A I think subject to those caveats about the updating of maps: yes."

And specifically in relation to Fox, after quoting a number of passages from it (Day 2/109):

> "Q. This is, really giving the game away, is it not?
>
> A. Which game?
>
> Q. It does not, it is true, mention the BA list.
>
> A. Yes.
>
> Q. And it does not, it is true, mention the location update, but to anyone in the industry, a GSM engineer involved in the design of mobile equipment, on reading this, he would fill in those gaps would he not, unless he said "This is all nonsense I won't take it seriously?
>
> A. Yes. He may well fill in the gaps."

This is an honest expert ultimately conceding that the idea of claim 1 would occur to the skilled team reading Fox.

We have not overlooked the point about periodicity. It was suggested that instead of thinking of using the out-of-area LAC, the skilled team might merely consider the use of the periodic updates which a mobile phone uses. But that is not in our view realistic. Dr. Maile's cross-examination shows this to be so (Day 2/103-4):

> "Q. Do you say there is some invention in choosing the location area update over the periodic update?
>
> A. They are both alternatives.
>
> Q. They are the only two alternatives?
>
> A. Yes.

> Q What is more, the use of the location area code to prompt that update is something which is familiar to people in this industry for the purpose we went through this morning?
>
> A. Yes we have been through that.
>
> Q. There is no advantage in using the periodic update facility?
>
> A. There is no advantage, no.
>
> Q. But there is an advantage in using the location update facility, because you get an immediate answer, virtually?
>
> A. Yes."

Now the Judge gave three reasons for rejecting the obviousness case. The first two were essentially the same, that the skilled team would not think of using an out-of-area LAC to implement the idea of using a fake base station to catch IMSIs. This overlooks Dr Maile's concession we have recorded above.

It also does not deal with the point that the skilled team, having realised that the false base station must, within its area of operation, "swamp" the real station with a more powerful signal, would also have to put its mind to what area code it should use. It would already know that an out-of-area code would cause the mobiles within its range to respond with their IMSIs. It does not require imagination to see that, when your mind is already put to the question: what LAC shall I use?

Mr Wilson did try to raise another point not raised before. It was this: that even if you did make a machine which was set to use the LAC for the real base station within which the target mobile was located (and not an out-of-area LAC) on occasions (when near the border between different location areas) it might use an out-of-area LAC accidentally. Whilst that might well be so, and indeed perhaps seems so on the existing evidence, we are not prepared to decide the case on a basis not raised before, one which was not advanced in evidence or put to any of the experts.

We should finally mention the Judge's third reason for rejecting the obviousness case, that the skilled team would think by analogy with prior art analogue phone call interception. He pointed out that there is nothing in Fox which says the virtual base station does not work by waiting for a call to be made. We think he erred here for Fox talks about identifying "all subscribers within the device's radio cell with a mobile phone that is switched on." Unless "switched on" means "in use," Fox cannot be talking about a device which works only when a call is being made. Further, the analogue devices worked by intercepting the phone call, whereas Fox is clearly talking about catching IMSIs – which have no parallel in the analogue world.

Mr Howe's main point in response was that the Judge was entitled to conclude that the skilled team, unimaginative as it is taken to be, would not see the analogy between using an out-of-area LAC for provoking a response when testing mobile phones and the problem of implementing Fox. This was the point made by the Judge. We do not accept it, because we think the skilled team would inevitably bump into the problem

of what LAC to use and because Dr Maile conceded that the team would see it, making the evidence all one way.

We would add that we appreciate the careful and measured way in which the Judge dealt with the multifarious issues raised by the defendants. It may be that if they had concentrated their case on their best point, obviousness over Fox, he would not have fallen into error.

Personal liability of Mr Timson

Our conclusion on obviousness makes this point academic. The parties elected that we should decide it on their written arguments. Our provisional view is that the Judge erred here. Mr Timson was not a shareholder or director of any of the CellXion companies; he did not sell their devices and was not the controlling mind behind them. Moreover the claim is to a process, and it was not shown that Mr Timson had trained customers within the jurisdiction. True it is that he played a major part in the development of the company defendants' product, but that alone is not enough to make him personally liable.

Conclusion

In the result we allow the appeal on the basis that the patent is invalid for obviousness over Fox. We dismiss the remitted issues appeal and all other matters raised on the main appeal save for the issue of the personal liability of Mr Timson as to which we make no final decision.