

## Looking Beyond the “Three-Step Approach” --Assessment of Inventiveness in China

Inventive step, or non-obviousness, is a general requirement present in most patent laws, according to which an invention shall be sufficiently inventive. The sufficient inventiveness, in essence, is a proper balance between the inventiveness for encouraging innovation and the temporary monopolies conferred by the patent system. In China, to assess the inventiveness, a problem-solution analysis is conducted by applying a three-step approach<sup>1</sup>. This article provides some practical insights with respect to how to rebut a lack-of-inventiveness rejection by looking beyond the three-step analysis.

### The Rejections

In principle, it is desirable to set up an objective standard to evaluate the inventiveness of an invention, but in practice, subjective factors are always involved in the assessment of inventive step<sup>2</sup>. It may have a significant effect on the Examiner for granting a patent right if the applicants can grasp the key point of the invention and pertinently prepare a response to the office action focused thereon.

Inventive step of an invention means that, as compared with the prior art, the invention has prominent substantive features and represents notable progress<sup>3</sup>. To determine whether an invention has prominent substantive features is to determine, to the person skilled in the art, whether the claimed invention is non-obvious as compared with the prior art<sup>4</sup>. Regarding the criterion to assess the inventive step of an invention, the “three-step approach” must be mentioned.

In an office action, in most cases the Examiner is found to evaluate the inventive step of the claims, at least formally, in accordance with the logic of “three-step approach”. However, applicants feel it’s difficult to reply to it under the framework of “three-step approach”. One of the main reasons lies in that: after the closest prior art is determined and the distinguishing features of the invention is determined as compared with the closest prior art, some examiners determine the technical problem actually solved by the invention on the basis of the distinguishing features instead of their technical effect and function<sup>5</sup>.

1 The approach consists of (1)determining the closest prior art;(2)determining the distinguishing features of the invention and the technical problem actually solved by the invention;(3)determining whether or not the claimed invention is obvious to a person skilled in the art. See the Guidelines for Patent Examination (the “Guidelines”).

2 Yin Xintian, “Introduction to the Patent Law of China” [M]. Beijing: Intellectual Property Publishing House, 2011

3 Patent Law of the People’s Republic of China, 2009 [M]. Beijing: Intellectual Property Publishing House, 2010

4 State Intellectual Property Office of the People’s Republic of China. Guidelines for Patent Examination 2010 [M]. Beijing: Intellectual Property Publishing House, 2010: Section 2.2, Chapter 4, Part 2

Consequently, they tend to simply consider the distinguishing features as common technical knowledge, or customary technical means, believe there is a technical motivation in the prior art, and finally reach a decision that the claimed invention does not involve an inventive step. The logic of evaluating inventive step by the “three-step approach” is substantially “backward reasoning.” In other words, the Examiner first presumes that “the person skilled in the art” can be aware of the technical problem to be solved and has access to all the technical means existing before the filing date to solve the technical problem, and then determines the obviousness of the claimed invention, which tends to underestimate the inventiveness of the invention. Under such circumstances, a dispute about whether a distinguishing technical feature is a common technical knowledge or customary technical means may lead to the deadlock of both applicants and the Examiner, if applicants are confined within the framework of the “three-step approach”. The most likely result is that the Examiner cannot be convinced and issues a decision of rejection.

Therefore, an experienced patent attorney must not only grasp “three-step approach” but also evaluate the inventive step of the invention as a whole beyond “three-step approach” when he drafts response to the office action related to inventive step.

### How to do it

On receipt of an office action, the patent attorney should first study the office action, the invention and the reference files cited in the office action carefully, try to outline differences between the invention and the reference files, and re-determine the key point of the invention referring to the closest prior art cited by the Examiner.

If the patent attorney can objectively deduce contradictions and logical errors in the office

5 Yu Ping, “determining the technical problem actually solved during the evaluation of the inventive step” [N]. China Intellectual Property News, 2013-12-20 (11)

action starting from the point of view of the Examiner, more effective communications with the Examiner can be achieved and the opinion of the patent attorney shall be more easily understood and accepted by the Examiner.

In the following, we will refer to an example to explain the above mentioned analyzing approach.

An example invention application relates to mobile communication techniques, and particularly to a method for monitoring synchronized channels (SCH) of neighboring cells (NCell). The background of this invention recites that a mobile terminal (MS) needs to keep monitoring SCHs of NCells so that the MS can handover between cells. In the prior art, there is one idle frame in every 26 TDMA frames and every idle frame contains 8 time slots, and the MS reads out carrier frequencies of the NCells from idle frames, wherein the MS can read out one carrier frequency in every one idle frame. It will be readily understood that when there are too many NCells required to be read, the MS may not be able to read out the carrier frequencies of all NCells in time and thus may result in handoff failures.

To overcome the above issue in the prior art, the example application provides a method as follows.

“1. A method for monitoring SCHs of NCells, characterized in comprising:

reading SCH signals of more than two NCells in more than two time slots of one TDMA frame; and

demodulating the SCH signals of the more than two NCells that have been read.”

In the office action, the Examiner cites a reference. In order to solve the problem that the SCH bit pattern can only be read within a first time slot (slot 0) of each SCH frame in the prior art, the reference proposes to include the SCH bit pattern in each time slot of each SCH frame. Thus, the SCH bit pattern can be read in any one time slot of a frame. It can be seen from the above content of the reference that the SCH bit pattern can be read in any one time slot of one frame, but not to read more than two SCH bit patterns in more than two time slots of one frame. Besides that, the reference is silent about any “neighboring cell (NCell)”.

The Examiner asserts that the reference has disclosed “reading SCH signals of more than two NCells in more than two time slots” as defined by claim 1, and he believes that the difference between the reference and the present application is: reading SCH signals in one “TDMA” frame. Then the Examiner concludes that the technical problem to be solved by the above differential

feature is to improve the communication quality. The Examiner further asserts that reading SCH signals in one TDMA frame belongs to common knowledge in the art, and thus rejects claim 1 for lack of inventiveness.

Now, let’s try the above-mentioned analyzing approach. Firstly, we determine distinguishing technical features in view of the closest prior art; secondly, we analyze the relationships of the distinguishing technical features as well as respective functions of those technical features, so as to determine the technical problems, technical solutions and technical effects of the present application; and finally, we determine the key point of the present invention.

By comparing the whole solution of claim 1 and that of the reference, we have understood that the reference fails to disclose the feature of reading SCH signals of more than two NCells in more than two time slots of one TDMA frame. Next, based on the above feature, it can be determined that the technical problem to be solved should be: how to improve the efficiency of reading SCH signals, and consequently, as technical effects of the present application, the SCH signals of NCells can be read more efficiently. Based on the above analysis, we can confirm that the key point of the invention has been defined in the original claim 1, and therefore, it is unnecessary to amend the claims.

Based on the key point of the invention, we get back to the office action to see whether the Examiner’s opinions about the correspondences of features are correct or not. On one hand, it is correct that the “SCH bit pattern” corresponds to “SCH signal” because the “SCH bit pattern” in the reference and the “SCH signal” in the present application have the same effect in their respective technical solutions and they are different terms that represent the same concept. On the other hand, however, the Examiner’s opinion about reading more than two SCH bit patterns in more than two time slots of one frame is not so reasonable. This is because, although the reference discloses that the SCH bit pattern is included in each time slot of one or more frames, the SCH bit pattern still has to be read in any one time slot of one frame, which cannot be equivalent to reading more than two SCH bit patterns in more than two time slots of one frame. In fact, the reference does not disclose the above distinguishing technical feature throughout the specification at all.

In this way, we come to a conclusion that the distinguishing technical feature determined by the Examiner is inaccurate, and accordingly the alleged technical problem solved by the present invention, which is determined based on the above distinguishing technical feature, is inaccurate, too.

Now, we have been clear what is wrong in the Examiner's opinions. Next, we will analyze the Examiner's reasoning logics, and try to find the weakness in the reasoning so as to determine what should be emphasized in our arguments. By analyzing, we find that the intrinsic logic of the Examiner is likely that even if the reference fails to disclose the SCH signals of two or more neighboring cells are read in two or more time slots of the same frame, those skilled in the art can readily conceive to read SCH signals of multiple neighboring cells in multiple time slots of one frame since the reference discloses reading one SCH signal in any one time slot of one frame.

Based on the above analysis, we argued in the response that the distinguishing technical feature determined by the Examiner is inaccurate, and we emphasized that in the prior art, only one SCH signal can be read in one frame, which is also true for the reference because the SCH signal still can only be read in one time slot of one frame, although said one time slot can be any one slot in one frame, not limited to the first slot. Therefore, the reference fails to disclose "reading SCH signals of more than two NCells in more than two time

slots of one TDMA frame" as defined by claim 1, and the above distinguishing technical feature does not belong to the common knowledge in the art either. The Examiner accepted our arguments and the application was granted a patent right.

### Conclusion

In conclusion, practically, how to determine whether an application is inventive because of the subjective factors involved in the judgment of inventive step has always been a difficult point. For a patent attorney, it is far from enough to remember the provisions and steps of the "three-step approach". The patent attorney shall always keep in mind that the technical solution should be considered as a whole to determine the inventive step of the invention, which is really in conformity with the provisions and spirits of the Patent Law and the Guidelines for Patent Examination.

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