

## Examiners' Report on Paper C, 2004

### GENERAL COMMENTS

- 1 The overall standard of candidates' answers showed an improvement this year. A common problem remained the lack of argumentation; it is insufficient merely to state a fact without justifying it. Statements should be supported by legal authority, factual reasoning or explanations. More than a formally valid opposition is required; candidates must present their best case, fully arguing all reasonable attacks.

#### Notice of Opposition

- 2 Most candidates realised that claims 1 and 4 lacked novelty. However, it is not sufficient merely to establish *where* claimed features can be found in prior art documents. Marks for argumentation are awarded for additionally addressing the question *why* certain details of prior art methods equate to claimed features.

An example is the feature "to form a solidified layer" in step (a) of claim 1. This is achieved in Annex 4, embodiment of Fig. 1 by initially placing the platform just below the liquid surface and exposing the thin layer of liquid on top of the platform, as set out at page 1, lines 21 to 23 of the English version and page 1, lines 23 to 26 of the French version.

Moreover, candidates should not simply quote extensive passages from prior art documents; they should draw attention to the salient passages only.

- 3 Although candidates attempted to apply the problem-solution approach, this was not always done well.
- 3.1 It is necessary to give reasons why a particular piece of prior art has been selected as the closest state of the art.

For example, concerning claim 2, Annex 4 was the only state of the art document relating to the layerwise construction of an object. Candidates were required to explain why the embodiment of Fig. 1 was a better starting point than that of Fig.2.

Turning to claim 5, candidates were expected to substantiate the choice of Annex 2.

- 3.2 Having identified the difference between the claimed subject matter and the closest state of the art, the problem is derivable from the known effect achieved by the contribution over the prior art. The problem to be solved was often wrongly formulated in terms of the solution itself.

For example, concerning claim 2, the problem was often wrongly identified as the replacement of Mercury or Xenon bulbs and a mask pattern by a laser beam rather than how to simplify and speed up the construction of complex objects.

- 3.3 Candidates should also bear in mind that each claim requires its own problem solution analysis.

This approach reveals that claim 3 differs in two respects from Fig. 1 of Annex 4 as the closest state of the art; the use of the laser and the way in which the platform is moved. These differences address two separate problems, which have to be analysed separately from each other.

- 3.4 There was little explanation as to why and how the skilled person would combine the teachings of two pieces of prior art.

For example, in the case of claim 2 it was necessary to explain that the skilled worker would not have had to make any major constructional alterations to the apparatus when incorporating a laser into the Fig.1 embodiment.

- 4 Certain candidates continue to confuse the issues of added subject matter and priority. Candidates are reminded that when considering the novelty or obviousness of a claim, the effective date of the claim is defined by its priority or filing date, even if a separate attack under Article 100(c) EPC is made.
- 5 All relevant facts and arguments relating to the grounds of opposition should appear in the notice of opposition, since this is the document which is filed at the EPO.
- 6 Candidates are reminded that their answer papers should comply with the requirements of complete anonymity. Amongst other things this means that the notice of opposition should be drafted as though the candidate is located in the representative's office and an indication of the local examination centre should **not** be given.
- 7 Many candidates used personalised obscure abbreviations or renumbered the annexes; this was both time-consuming for the candidate and confusing for the examiner.
- 8 Candidates should realise that not all of the annexes may be useable. This reflects the documents a representative might receive from a client, and also emphasises that the examination does not follow any set formula.
- 9 Candidates attacks often ran contrary to statements made in the client's letter.

For example, some candidates correctly stated that Annex 5 did not belong to the state of the art for any of the granted claims. They then went on to use this document in attacks on the claims. A similar comment applies to Annex 2, a German national application, which only belonged to the state of the art for claims 4 and 5 and could not therefore be used to attack claims 1 to 3 and 6.

Likewise, some candidates, after advising the client that claim 6 could not be attacked under Article 52(2)(c), went on to raise exactly this objection in the notice of opposition.

## Legal Issues

- 10 It is not necessary to answer the legal points in the form of an explanatory letter to the client. Rather than long explanations, concise answers addressed to a patent professional are acceptable and recommended. References to the notice of opposition with respect to priority, amendment during examination and the use of Annex 5 would also have saved unnecessary repetition and therefore time.
- 11 In dealing with the legal points, candidates often do not answer the question asked, but see the question as an opportunity to write everything they know on the topic without coming to a conclusion based on the facts at hand; this shows a lack of ability to carry out legal analysis.

As an example, the question, "How can we use Annex 5 to attack the claims in *this opposition?*" (emphasis added) drew comments about how this annex could be used in national proceedings in Denmark which was not required and for which no marks were awarded.

## SPECIFIC COMMENTS

### Notice of Opposition

(The first marks are for "use of information" and the second for "argumentation".)

### Added Subject Matter (4/4)

Many candidates did not realise that the introduction of claim 4 during prosecution of the application contravened Article 123(2). Those who did usually failed to appreciate that paragraph 17 required a particular arrangement of surfaces on the wiper blade in order to produce a uniform liquid layer. Such an arrangement of surfaces was an essential feature for embodiments relating to wiper blades. Its absence from claim 4 is what leads to the added subject matter objection.

A number of candidates correctly attacked claim 4 but then wrongly stated that claim 5 was also objectionable because it was dependent on claim 4. Some candidates, who objected to added subject matter, did realise that claim 5 restored the essential features missing from claim 4.

### Claim 1 (6/10)

Some candidates failed to notice that there were two novelty attacks based on Annex 4. Most of those who did make two attacks presented these separately. Those candidates who combined the attacks in such a way that the examiner could not clearly determine that two attacks were actually being made lost marks. In other words, a number of candidates gave the impression that they were relying on information from both embodiments to support a single novelty attack, which is clearly not permissible.

### Claim 2 (4/9)

The answers were generally good.

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Only a few candidates based a novelty attack on a combination of the two embodiments described in Annex 4 for which no marks were awarded.

Some candidates failed to clearly state that they were using the Fig. 1 embodiment of Annex 4 as closest state of the art.

An inventive step attack starting from the Fig. 2 embodiment of Annex 4 and combining it with the Fig. 1 embodiment is unrealistic. Such an approach ignores the fact that claim 2 and the Fig. 2 embodiment have fewer features in common. Nevertheless, candidates who provided a well argued inventive step attack based on the Fig. 2 embodiment as closest state of the art were awarded marks.

#### Claim 3 (7/9)

Again, some candidates failed to clearly state that they were using the Fig. 1 embodiment of Annex 4 as closest state of the art.

Many candidates did not explain why they considered D3 to reflect common general knowledge.

#### Claim 4 (8/5)

Here, too, answers were generally good, with most candidates opting for a novelty attack from Annex 2. Candidates who made an inventive step attack starting from this document and argued that viscosity would normally be measured at room temperature, *i.e.* 20°C were also awarded points. Some candidates noted that this temperature was already contemplated in Annex 4 for viscosity measurement.

#### Claim 5 (6/5)

Marks were not awarded for a novelty attack from Annex 2, based on the argument that the smallest possible gap between two blades implied the use of a single blade.

Many candidates failed to notice that both claim 5 and Annex 2 sought the formation of uniform layers, leading to no derivable technical effect by the use of one rather than two wiper blades. As a result of this the problem of finding an alternative wiper blade construction had to be deduced from the difference.

#### Claim 6 (2/3)

No marks were awarded for Article 52(2)(c) or novelty attacks.

Many candidates making an inventive step attack did not use the problem-solution approach.

Most candidates recognised that claim 6 was an independent claim to a computer program. However, they often failed to point out that such a program was conceived in an attempt to automate the method of claim 1, so that Annex 4 (either embodiment) was the closest state of the art.

#### Legal Issues (18 marks)

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### Priority

This question was generally well answered. To gain maximum points it was necessary to specify that the lack of any mention of a wiper blade in the priority document led to claims 4 and 5 only being entitled to the filing date.

### Amendment during Examination

Many candidates who attacked claim 4 for added subject matter failed to advise the client that there was no such objection to claim 5, as it contains the essential feature set out in paragraph 17.

### Computer Programs

What was required was an indication of why claim 6 could not be attacked merely because it relates to a computer program. The necessary information can be found in the Guidelines C-IV, 2.3.6.

### Use of Annex 5

Many candidates came to the right conclusion but failed to provide the correct legal basis.

### Joint Opposition

Nearly all candidates answered this question correctly.

## Possible Solution – Paper C

### Notice of Opposition

#### *Priority and State of the Art*

Claims 1 to 3 and 6 were in the priority document and therefore take the priority date of 09.08.1999 (Article 88(3) and 89 or Guidelines C-V, 2.2). Since the wiper blade was added at filing, claims 4 and 5 take the filing date of 07.08.2000 (Article 87(1), G2/98 or Guidelines C-V, 2.5).

Annex 2, a German national application published between the priority and filing dates of Annex 1, is Article 54(2) state of the art for claims 4 and 5.

Annexes 3 and 4, both published before the priority date of Annex 1, are Article 54(2) state of the art for all six claims.

Although Annex 5 does not belong to the state of the art for any of claims 1 to 6, it does contain a statement that computers have been used in industrial processes for decades, which can be used to support an inventive step objection against claim 6.

#### *Added Subject Matter*

The subject matter of claim 4 is not described in paragraph 17 of Annex 1, which has the only detailed disclosure of wiper blades in the application as filed. This paragraph does not disclose a wiper blade having a surface exhibiting only a low surface adhesion. It requires leading surface 10 of wiper blade 8 to be formed of high surface adhesion material and trailing surface 11 to be formed of low surface adhesion material. As pointed out in the final sentence of paragraph 17 this particular arrangement of leading and trailing surfaces is essential to ensure that a uniform layer of liquid polymer is formed over the previously solidified layer. Since claim 4 does not require this arrangement of surfaces it contravenes Article 123(2) (T 331/87 or Guidelines C-VI, 5.8.a). Claim 4 is therefore open to objection under Article 100(c).

#### *Claim 1 Annex 4: Novelty Article 54(2)*

Annex 4 relates to a method for the fabrication of a three-dimensional model by layerwise solidifying a liquid and stacking the solidified layers (English and French versions p. 1, ls. 10 to 12). Two embodiments of this method are described with respect to Figs 1 and 2. Each embodiment separately discloses the method steps (a), (b) and (c) of claim 1 and deprives claim 1 of novelty.

#### *Method of Embodiment 1 (Fig. 1):*

Relevant passages for step (a) can be found at p. 1, ls. 20-24 of the English version and at p. 1, ls. 22-27 of the French version. *Platform 43 is placed just below the surface of liquid 42, which solidifies on exposure to ultraviolet (UV) radiation. The layer of liquid on top of the platform is exposed to, i.e. irradiated with, UV radiation 46 from mercury or xenon bulbs via mask pattern 47. The mask pattern controls, i.e. selects, the exposure area.*

Relevant passages for step (b) can be found at p. 1, ls. 24-27 of the English version and at p. 1, ls. 27-31 of the French version. *Platform with solidified layer is lowered, i.e. moved, stepwise into liquid and, at each position of rest, fresh liquid layer exposed to radiation through a mask pattern.* Implies that each time the platform is moved liquid fills space left by the movement of previously solidified layer. References to stepwise lowering of platform and each position of rest of platform at p. 1, ls. 24-26 of the English version or at p. 1, ls. 27-29 of the French version imply that steps (a) and (b) of claim 1 are repeated, as required by step (c).

Method of Embodiment 2 (Fig. 2):

Relevant passages for step (a) can be found at p. 2, ls. 4-8 of the English version and at p. 2, ls. 5-10 of the French version. *Platform 43a is initially positioned a single layer thickness above quartz window 48a. Layer of liquid 42a between platform and quartz window is scanned with a laser beam 46a of UV light emitted by a laser 45a. This results in selected areas of the liquid layer solidifying.* The laser is therefore used to select and irradiate portions of the liquid.

Relevant passages for step (b) can be found at p. 2, ls. 8-10 of the English version and at p. 2, ls. 10-13 of the French version. *Platform raised, i.e. moved, single layer thickness. Fresh liquid enters gap between previously solidified layer and quartz window.*

Relevant passages for step (c) can be found at p. 2, ls. 11-12 of the English version and at p. 2, ls. 14-15 of the French version. *Raising platform and exposing single layers of liquid repeated until object complete.*

*Claim 2 (Dependent on Claim 1) Annex 4, Figs 1 and 2: Inventive Step Article 56*

Annex 4 is the only available document relating to the layerwise construction of objects. The embodiment of Fig. 1 is the closest state of the art, because it also discloses the additional claim 2 features of downward movement of solidified layers and liquid viscosity below 30 mPa.s at 20°C (English version p.1, ls. 24-26, p. 2, ls. 26-27; French version p. 1, ls. 27-29, p. 2, ls. 30-32).

Claim 2 differs from Annex 4, Fig. 1 in that irradiation is performed by scanning the liquid surface with a laser beam.

According to paragraph 06 of Annex 1, the technical effect associated with this difference is that layers of different shape can be easily and rapidly solidified.

The problem to be solved is therefore to simplify and speed up the construction of complex objects with intricate internal structures.

The English version of Annex 4 at p. 2, ls. 12-14 or the French version at p. 2, ls. 15-17 tells the skilled worker that the use of a laser would enable him to irradiate the liquid selectively without the need to use mask patterns, thus enabling complex objects to be produced quickly and simply.

Although this disclosure relates to the Fig. 2 embodiment it is clear that the laser can be incorporated into the Fig.1 embodiment without making any major constructional alterations to the apparatus used.

Claim 2 therefore lacks inventive step starting from Fig. 1 of Annex 4 and combining it with the irradiation source described with respect to Fig. 2.

*Claim 3 (Dependent on Claim 2) Annexes 4 and 3: Inventive Step A56*

Annex 4, Fig. 1 is again the closest state of the art for the same reason as already given under claim 2.

Claim 3 differs from the closest state of art by the use of a laser and the fact that the solidified layer is initially lowered into the solidifiable liquid beyond the level required for the next layer to form and then raised back to the required level.

The use of a laser has already been found to lack an inventive step under claim 2.

According to paragraph 16 of Annex 1 the technical effect associated with the additional feature of claim 3 is to reduce the time for forming liquid layers.

The problem to be solved is to speed up the formation of thin layers in the production of complex objects. This can be deduced from the final sentence of paragraph 15 of Annex 1.

A3 is a surface tension experiment for schoolchildren, dealing with what happens when a solid object is pushed below the surface of water. Paragraphs 3 and 4 teach that the object can be pushed some distance below the water's surface before water floods over its upper surface. Paragraph 5 points out that these effects also apply to other liquids.

Annex 3 is taken from a book on physics experiments for schoolchildren. The skilled worker would therefore consider this annex as common general knowledge and combine it with Annex 4, Fig.1 to lower platform along with the solidified layers in the manner required by claim 3.

This problem/solution is independent of the problem/solution of claim 2 so that A3 can be combined with the combination of the two embodiments described in Annex 4.

Claim 3 therefore lacks an inventive step over Annexes 4 and 3.

*Claim 4 (Dependent on Claim 2) Annex 2: Novelty A54(2)*

Annex 2 relates to an apparatus for the layerwise fabrication of an object (p. 1, ls. 18-19 of both the German and English versions).

Relevant passages for step (a) can be found at p. 2, ls. 1-8 of the German version and p. 2, ls. 1-7 of the English version. *Apparatus comprises tank 21 for liquid photo-hardenable polymer 22, which solidifies on exposure to UV radiation. Model 24 formed on a platform 23 mounted in tank so that it can be lowered stepwise into liquid polymer. Surface layer of liquid polymer (above the platform) scanned by UV laser beam.* The laser is therefore used to select and irradiate portions of the liquid. Relevant passages for step (b) can be found at p. 2, ls. 12-14 of the German version and p. 2, ls. 11-14 of the English version. *Platform is then lowered and layer of fresh liquid forms slowly over the previously solidified layer, even at liquid viscosities below 25 mPa s.* This value of viscosity lies within the required viscosity range of 30



mPa.s. Annex 2 does not disclose at what temperature viscosity is measured unless otherwise stated, viscosity is measured at room temperature, i.e. 20°C.

References to stepwise lowering of platform at p. 2, ls. 3-5 of the German version or at p. 2, ls. 3,4 of the English version imply that steps (a) and (b) of claim 1 are repeated, as required by step (c).

EITHER: To create a liquid layer a wiper blade with low surface adhesion for the liquid polymer is moved along the liquid surface (German version p. 2, ls. 16-18, 29-32 or English version p. 2, ls. 15-16, 26-28).

OR: Two wiper blades 30 and 31 are moved along liquid surface to create a liquid layer, wiper blade 31 having low surface adhesion (German version p. 2, s. 120-22, p. 3, ls. 1-6 or English version p. 2, ls. 18-19, p. 3, ls. 3-5).

*Claim 5 (Dependent on Claim 4) Annex 2: Inventive Step Article 56*

Annex 2 is the closest state of the art, since it has most features in common with claim 5 and discloses the use of wiper blades to form liquid layers.

Annex 2 additionally discloses separate leading and trailing wiper blades made of materials exhibiting high and low adhesion, respectively, for the solidifiable liquid (German version p. 3, ls. 1-6 English version p. 3, ls. 1-5).

Claim 5 therefore differs from Annex 2 in that a single wiper blade is provided with leading and trailing surfaces exhibiting high and low adhesion, respectively, for the solidifiable liquid.

There is no derivable technical effect associated this difference. Annex 1, paragraph 17 and Annex 2, German version p. 2, ls. 20-22 or English version p. 2, ls. 18-19 both refer to uniform layer formation.

The problem is therefore to find an alternative wiper blade construction.

Combining high and low adhesion surfaces in a single wiper blade is obvious in view of the statement in Annex 2, at p. 3, ls. 14-15 (German version) or p. 3, ls. 12-13 (English version) that the gap between the wiper blades should be as small as possible to obtain uniform liquid layers.

Claim 5 therefore lacks an inventive step over A2.

*Claim 6 Annex 4 alone or with Common General Knowledge derived from Annex 5: Inventive Step Article 56*

Annex 4, Fig. 1 or 2 disclosing methods satisfying claim 1 is the closest state of the art.

Annex 4 does not teach that the methods are computer controlled.

Technical effect and Problem are the automation of the methods of Annex 4.

EITHER: Automation is the normal aim of the skilled person, T 234/96 and T 775/90 (case law book I D 6 20 2)

OR: It is common general knowledge that industrial processes are computer controlled, Annex 5, French version p. 2, ls. 18-21 or English version p. ls. 20-23.

It would have been a purely routine task for the skilled worker to devise a computer program for conducting the method of claim 1 under the control of a computer.

Claim 6 therefore lacks an inventive step.

## **Legal Issues**

### *Priority*

See notice of opposition.

### *Amendment during Examination*

The application as filed did not disclose the subject matter of claim 4, because it is not possible to remove a feature described as essential without infringing Art. 123(2). See notice of opposition for details. There is no objection to claim 5 because it requires the arrangement of surfaces described in § 17.

### *Computer Programs*

Article 52(2)(c) excludes computer programs from patentability, but Article 52(3) restricts this exclusion to computer programs as such. According to T 1173/97 or T 935/97 or Guidelines C-IV, 2.3 a computer program capable of controlling an industrial process as set out in claim 1 of Annex 1 is considered to exhibit a technical effect. The technical effect may already be known in the prior art. Consequently there is no objection to claim 6 under Art 52(2)(c) and (3).

### *Annex 5*

Annex 5 is a WO application published after the filing date of Annex 1 but claims an earlier priority date. It is not prior art under Art 54(3) because there is no regional designation for a European Patent and DK is a national, not a regional designated state. There is no European application in the sense of Art 158(1). Annex 5 does not therefore belong to the state of the art at all.

Annex 5 can nevertheless be used to attack the inventive step of claim 6 of Annex 1, as explained in the notice of opposition.

### *Joint Opposition*

According to G 3/99 both 3D Models and Models and More firms could have filed a joint opposition while paying only one opposition fee.

**EXAMINATION COMMITTEE II** Candidate No.

Paper C 2004 - Schedule of marks

Category	Maximum possible	Marks awarded	
		Marker	Marker
Use of information	37		
Argumentation	45		
Legal aspects	18		
Total	100		

Examination Committee II agrees on ..... marks and recommends the following grade to the Examination Board:

PASS  
(50-100)

FAIL  
(0-49)  
COMPENSABLE FAIL  
(45-49, in case the candidate sits  
the examination for the first time)

Budapest, 08 July 2004

... - Chairman of Examination Committee II