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**D E C I S I O N**  
**of 5 April 2005**

**Case Number:** T 0938/03 - 3.3.6

**Application Number:** 96928267.2

**Publication Number:** 0856079

**IPC:** D21 C9/06

**Language of the proceedings:** EN

**Title of invention:**

Supply of washing liquid in a fractionating multi-stage washer

**Patentee:**

Andritz Oy

**Opponent:**

KVAERNER PULPING TECHNOLOGIES AB

**Headword:**

Pulp washing/ANDRITZ

**Relevant legal provisions:**

EPC Art. 114(1), 108, 56, 54

EPC R. 56(1), 55(c)

**Keyword:**

"Admissibility of appeal (yes) - substantiation related to the reasons for the impugned decision, not to the extent of the opposition"

"Extent of opposition - not also determined by facts and arguments in the notice of opposition"

"Main and fifth auxiliary request: novelty (no)"

"First to fourth auxiliary request: inventive step (no)"

**Decisions cited:**

G 0009/91, T 0448/89, T 0926/93, T 0114/95, T 0376/90,  
T 1019/92

**Catchword:**

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Case Number: T 0938/03 - 3.3.6

**D E C I S I O N**  
of the Technical Board of Appeal 3.3.6  
of 5 April 2005

**Appellant:** KVAERNER PULPING TECHNOLOGIES AB  
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**Representative:** -

**Respondent:** Andritz Oy  
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**Decision under appeal:** Interlocutory decision of the Opposition  
Division of the European Patent Office posted  
20 August 2003 concerning maintenance of the  
European patent No. 0856079 in amended form.

**Composition of the Board:**

**Chairman:** P. Krasa  
**Members:** G. Dischinger-Höppler  
R. T. Menapace

## Summary of Facts and Submissions

- I. This appeal is from the interlocutory decision of the Opposition Division concerning maintenance in amended form of the European patent No. 0 856 079 entitled "Supply of Washing Liquid in a Fractionating Multi-Stage Washer".
- II. A notice of opposition had been filed against the granted patent, wherein the Opponent, by ticking the relevant box in EPO form 2300, sought revocation of the patent in its entirety. He based the opposition, by ticking the relevant boxes in EPO form 2300 and by expressly stating it in the introduction to the extensive indication of facts, evidence and arguments, on the grounds of lack of novelty (Article 54 EPC) and inventive step (Article 56 EPC).

During the opposition proceedings, the Opponent further relied, *inter alia*, on the following documents:

D12 US-A-4 664 749 and

D13 "Pulping Processes" by S.A. Rydholm, 1965,  
Interscience Publishers, N.Y., pages 732 to 738.

The patent proprietor filed amended claims in four auxiliary requests.

- III. In its decision, the Opposition Division gave detailed reasons why it held
- that the amendments made to the claims of the Proprietor's then pending four auxiliary requests

fulfilled the requirements of Article 84 EPC and were based on the application as filed as required by Article 123(2) EPC,

- that the subject-matter of Claim 1 as granted and of the claims according to the Proprietor's first to third auxiliary requests were anticipated by the cited prior art and
  
- that the subject-matter claimed in the Proprietor's fourth auxiliary request was both novel and inventive over the cited prior art.

In the decision under appeal it is further stated that, as the statement of facts and arguments in the notice of opposition addressed Claim 1 only, the opposition against Claims 2 to 20 lacks the substantiation which is required in Rule 55(c) EPC, and, therefore, is rejected (cf. e.g. decision T 448/89) and that "[i]n other words, the opposition division decides to limit the extent of opposition to claim 1". Accordingly, the substantive examination of the opposition and the reasons for the decision under appeal in respect of the granted patent were confined to its Claim 1.

- IV. This decision was appealed by both, the Opponent (hereinafter Appellant I) and the Patent Proprietor (hereinafter Appellant II).
  
- V. The latter, referring to decision T 114/95, maintained that the Opposition Division had correctly decided to restrict the opposition to Claim 1 as granted, because Appellant I in its letter of opposition had not presented a substantial attack against Claims 2 to 20.

As Appellant I, in its reasons for the appeal, had not filed any arguments as to why the rejection of the opposition against those claims as inadmissible was not justified, the appeal of Appellant I was inadmissible for lack of substantiation. Appellant II later withdrew its contention that the appeal of Appellant I was (also) inadmissible for the reason that the latter was not adversely affected by the impugned decision.

VI. Upon a request of Appellant II, oral proceedings before the Board of Appeal were held on 5 April 2005 in the course of which the Appellant II filed five versions of an amended Claim 1 in a new main and four auxiliary requests and maintained the claims held allowable in the decision under appeal as its fifth auxiliary request.

Claim 1 of the main request reads:

"1. A method of effecting displacement wash of pulp comprising feeding the pulp to be washed to a single-stage or a multi-stage washing system, washing the pulp therein and discharging the pulp from the system, feeding clean wash liquid to the system, and discharging at least one filtrate from the system; characterized in that the or each washing stage is divided into at least two zones, and at least a portion of the filtrate from a suction, press and/or thickening stage following the wash itself is guided to a first zone of the washing stage immediately preceding said suction, press and/or thickening stage, to serve as wash liquid."

Claim 1 of the first and secondary auxiliary requests differ from Claim 1 of the main request by the following characterizing features:

First auxiliary request:

"in that in a fractionating wash, in which at least two separate filtrates are extracted from the or each washing stage, at least a portion of the filtrate from a suction, press and/or thickening stage following the wash itself is guided to the immediately preceding washing stage, to serve as wash liquid."

Second auxiliary request:

"in that in a fractionating wash, in which in the or each washing stage, separate filtrates of different concentrations are extracted from at least two zones provided in the stage, one separate filtrate being extracted from each zone, at least a portion of the filtrate from a suction, press and/or thickening stage following the wash itself is guided to a first zone of the washing stage immediately preceding said suction, press and/or thickening stage, to serve as wash liquid."

Claim 1 of the third auxiliary request differs from that of the main request in that the characterizing portion has been replaced by the following wording:

"wherein at least a portion of the filtrate from a suction, press and/or thickening stage following the wash itself is guided to the immediately preceding wash/washing stage, to serve as wash liquid, characterized in that the or each washing stage is divided into at least two zones from which separate

filtrates of different concentrations are extracted, one separate filtrate being extracted from each zone, and at least a portion of the clean wash liquid is guided separately to the last zone of the immediately preceding wash/washing stage."

Claim 1 of the fourth auxiliary request reads:

"1. A method of effecting displacement wash of pulp comprising feeding the pulp to be washed to a multi-stage washing system, washing the pulp therein and discharging the pulp from the system, feeding clean wash liquid to the system, and discharging at least one filtrate from the system; characterized in that in a multi-stage fractionating wash, at least a portion of the filtrate from a suction, press and/or thickening stage following the wash itself is guided to a first zone of the washing stage immediately preceding said suction, press and/or thickening stage, to serve as wash liquid."

Claim 1 of the fifth auxiliary request differs from Claim 1 of the main request by the following characterizing features:

"in that at least a portion of the filtrate from a suction, press and/or thickening stage following the wash itself is guided to the immediately preceding wash/washing stage to serve as a wash liquid, and in that in a multi-stage fractionating wash at least a portion of the filtrate from a suction, press and /or thickening stage following the wash itself is guided to a first zone of the immediately preceding wash/washing stage to serve as wash liquid."

VII. The Appellant I objected to the admissibility of the amendments made to the claims

- under Article 84 EPC for an alleged introduction of non-clarity by combining in Claim 1 of the main request the subject-matter of Claims 1 and 8 as granted and for the introduction of the terms "a first zone" and "last zone" in the several auxiliary requests,
- under Article 123(2) EPC for the introduction of the term "at least two zones" in several requests,
- and under Article 123(3) EPC for the introduction into Claim 1 of the main and first to fourth auxiliary requests of the feature relating to the guiding of filtrate "to a first zone of the washing stage immediately preceding the suction, press and/or thickening stage".

Concerning novelty and inventive step, the Appellant I submitted in essence the following arguments:

- Given the fact that the patent in suit did not allow any distinction between the terms "stages" and "zones", the subject-matter of Claim 1 of the main request was, *inter alia*, anticipated by the disclosure of D13 and the subject-matter of Claim 1 of the first and third auxiliary request was not novel, e.g. over D12.
- The subject-matter of Claim 1 of the first to third auxiliary requests was not inventive, *inter*



*alia*, in view of the prior art disclosed in D13 and the prior art represented in Figure 2 of the patent in suit. The subject-matter of Claim 1 of the fourth auxiliary request was not inventive over the latter prior art in combination with the disclosure of D12.

- Concerning the fifth auxiliary request, Appellant I referred to the Opposition proceedings.

VIII. Appellant II disputed the objections relating to the amendments made to the claims and submitted that a clear distinction was made in the patent in suit between "stages" and "zones". In particular, it argued that there was a different circulation of filtrate between stages and between zones.

Concerning the objections on novelty and inventive step, Appellant II argued that

- it was apparent that the different circulation of the filtrate from the suction, press and/or thickening stage (hereinafter: press or press stage) to the first zone of the last washing stage improved the efficiency of the washing process disclosed in the prior art represented in Figure 2 of the patent in suit;
- no zones or fractionation within the meaning of the patent in suit were disclosed in D12 or D13; instead only one filtrate was derived from the stages disclosed in these citations;

- D13 related to a multi-stage process with another thickening stage between the washing system and the press;
- there was no reason for a skilled person to combine the fractionating multi-stage process of the prior art according to Figure 2 of the patent in suit with the non-fractionating process of D13;
- D12 was concerned with the different problem of foaming during the displacement wash and related to the different purpose of the press stage for increasing consistency;
- a combination of the prior art according to Figure 2 of the patent in suit with the non-fractionating process disclosed in D12 would not result in the claimed subject-matter since in D12 the filtrate from the press was not guided to the first zone of the last wash.

Concerning the fifth auxiliary request, the Appellant II referred to its arguments presented during opposition proceedings but conceded that its Claim 1 covered the subject-matter of Claim 1 as granted which was rejected in the decision under appeal for lack of novelty in view of D12.

Further, Appellant II submitted that the appeal of Appellant I was inadmissible for lack of substantiation concerning the Opposition Division's decision to reject the opposition against Claims 2 to 20 as granted.

IX. Appellant I requested that the decision under appeal be set aside and the patent be revoked.

Appellant II requested that the decision under appeal be set aside and the patent be maintained on the basis of one version of Claim 1 as submitted during the oral proceedings as main request and first to fourth auxiliary requests or, as fifth auxiliary request, with the claims held allowable in the decision under appeal.

### **Reasons for the Decision**

1. *Admissibility of the appeal of Appellant I*

1.1 The appeal of Appellant II is admissible.

1.2 The appeal of Appellant I, whose admissibility was disputed by Appellant II for lack of substantiation (point V above), is admissible for the following reasons:

It is established case law (see Case Law of the Board of Appeal of the European Patent Office, 4<sup>th</sup> edition 2001, chapter VII.D.7.5.1) that an appeal is adequately substantiated, if the grounds of appeal specify the legal or factual reasons why the impugned decision should be set aside. The arguments must be clearly and concisely presented to enable the Board and the other party or parties to understand immediately why the decision is alleged to be incorrect, and on what facts the Appellant bases its arguments, without first having to make investigations of their own.

The statement of the grounds of appeal was filed by Appellant I in good time and complies with this requirement concerning substantiation, as it contains - which Appellant II did not contest - extensive and detailed arguments why the finding that the amended version (according to auxiliary request 4) of the patent was allowable and the conclusions of the Opposition Division underlying the impugned decision were both incorrect, in particular that and why also said version of (Claim 1 of) the patent was not allowable under Article 84 EPC and for not meeting the requirement of novelty.

That being so, it is, for the purpose of admissibility, of no relevance that Appellant I in the statement of the grounds for its appeal was silent on the limitation of the examination of the opposition to granted Claim 1 (all the more it being a "decision" of the Opposition Division not appearing in the order of the decision under appeal).

2. *Extent to which the patent was opposed*

- 2.1 The Opposition Division found that the opposition by Appellant I was limited to Claim 1 of the patent opposed and restricted the examination of the opposition to that claim on the ground that, the statement of facts and arguments addressed Claim 1 only.

This finding was, however, contrary to Rule 55 EPC and the established case law of the Boards of Appeal of the European Patent Office. Whilst neither the Opposition Division nor a Board of Appeal has the power to examine and decide on the maintenance of a European patent

except to the extent to which it was opposed (G 9/91, OJ EPO 1993, 408; in which, however, it was held that this limitation is not applicable to subject-matter of claims depending on an independent claim falling in opposition or appeal proceedings, provided their validity is prima facie in doubt), such extent does not depend on the second requirement under Rule 55(c) EPC, namely the indication of the grounds of opposition and the facts, evidence and arguments in support of these grounds. Rather, the extent to which a European patent is opposed is exclusively determined by what has been implicitly (see decision T 376/90, OJ EPO 1994, 906, reasons No. 2.2) or explicitly indicated - here by ticking the relevant box in EPO form 2300.

In Rule 55(c) EPC no reference is made to the claims of the patent. Thus, if an opponent requested revocation of the patent in its entirety, the fact that no specific prior art material had been cited against a dependent claim does not exclude that claim from the opposition (decision T 1019/92, not published in the OJ EPO, reasons No. 2.1) and it is sufficient to substantiate the ground(s) of opposition in respect of at least one claim of the patent for the requirements of Rule 55(c) EPC to be met (decisions T 926/93, OJ EPO 1997, 447, reasons No. 3 and T 114/95, not published in the OJ EPO, reasons No. 1.4).

- 2.2 Decision T 448/89 (OJ EPO 1992, 361), on which the Opposition Division relied, is not relevant, because it was restricted to the issue of what constitutes a (substantiated) written reasoned statement within the meaning of Article 99(1) EPC and to the corresponding requirement pursuant to Rule 55(c) EPC (see headnote);

it was completely silent on the first requirement of the latter provision, i.e. the required statement of the extent of opposition.

As regards decision T 114/95, to which the Appellant II referred during the oral proceedings before the Board, that decision does not support, rather it rebuts (see above) the view of a limited extent of the opposition under consideration, where undisputedly substantive ground(s) in respect of (the sole independent) Claim 1 of the granted patent had been submitted together with the notice of opposition.

2.3 The Board sees no reason for deviating from the relevant uniform jurisprudence which it considers, in respect of the extent of the opposition, to reconcile in a balanced manner the legal and practical requirements for correct and efficient opposition proceedings.

2.4 For these reasons, it has to be concluded that the opposition in question was not confined to Claim 1 as granted, but covered the patent opposed in its entirety, so that the Board is empowered under Article 114(1) EPC to decide on the patent as a whole, including revoking it.

3. *Amendments (Articles 84 and 123 EPC) and interpretation (all requests)*

3.1 The Board is satisfied that no problems under Article 84 EPC have been introduced by the amendments made and that the claims comply with the requirements of Article 123(2) and (3) EPC. Since the appeal of

Appellant II fails for other reasons, no further reasons need to be given here.

- 3.2 However, the objections made by Appellant I in this respect give rise for interpretation of the terms "wash", "washing stage", "immediately preceding washing stage", "a first zone" and "the last zone" since there is no explicit definition of those terms given in the patent in suit.

Further, it is necessary in view of the contradictory positions of the parties (see above points VI and VII) to establish on the basis of the patent in suit the meaning of the term "stage" versus that of the term "zone" since, as agreed by the parties, there exists no generally accepted and uniform usage of those terms in the art.

- 3.3 The following interpretations were not disputed by the Appellant II:

- 3.3.1 The term "wash" denotes both the washing action (the effect of displacing washing liquid within the pulp) and the washing system as such, i.e. the washer which is arranged to include the moving wire but does not include the initial stage of web formation and the final stage of filtrate extraction before pulp discharge. This washing system may be divided into several stages along the moving wire, i.e. the "washing stages" to form a multi-stage washing system, or not divided in which case the washing system consists of one single stage. In this latter case the only washing stage of the washing system corresponds therefore to the wash in the sense of the washing system. Further,

the term "washing stage" denotes a unity to which washing liquid is fed and from which - after displacement of liquid from the pulp - washing filtrate is withdrawn (see in particular claims and Figures 1, 2, 5, 6 and 12 to 14 in combination with the corresponding description and paragraph [0010] of the patent in suit).

3.3.2 According to the patent in suit (loc. cit.), the washing stages are subdivided along the moving wire into two or more (column 6, lines 5 to 9) successive washing zones which function basically in the same manner as the stages, i.e. liquid is fed and withdrawn from each zone. In consequence of this arrangement, each washing stage includes a first and a last washing zone in the moving direction of the wire as is depicted in Figure 2 of the patent in suit. Therefore, the somewhat ambiguous use of "**a**" in the feature "the wash itself is guided to **a** first zone of the washing stage immediately preceding said suction ... stage" can only be interpreted as **the** first zone of that particular stage.

3.3.3 As is indicated above, the operation of a washing zone consists in that washing liquid which is fed to each zone displaces within this zone liquid from the pulp which latter liquid is withdrawn from the zone as washing filtrate. Insofar, no distinction can be made between zones and stages.

From a comparison of Figures 1 and 2 to 3 in the patent in suit, it can however be implicitly derived that in a multi-stage system succeeding stages are directly interconnected with each other so that the filtrate from one stage is fed as washing liquid to the



preceding stage seen in the direction of the moving wire. In contrast, in a system where the stages are sub-divided into zones, the filtrate of the first zone of one stage is not fed to the directly preceding zone but to the first zone of the preceding stage, thus leaving one or more zones in-between. Likewise, the filtrate of the last zone of a stage is fed to the last zone of the preceding stage etc.. This embodiment is called "fractionating multi-stage washer" since it results in a fractionation of the filtrate of each stage into several filtrates of different concentrations (see patent in suit, column 5, line 32 to column 6, line 4). This principle translates in the case of a single-stage washer into a system wherein the only stage is sub-divided into several zones from which different fractions of different concentrations can be extracted, but where the zones are not interconnected otherwise.

According to the patent in suit (column 6, lines 9 to 13), the sub-dividing into zones does not necessarily result in a fractionating system since the stages may also be divided into zones by supplying two or more wash liquids of different concentrations to a stage but extracting only one filtrate.

However, it follows from the above that the zones of a single-stage/multi-zones washing system, whether fractionating or not, differ from the stages of a multi-stage system with no zones in any case in that the zones are not interconnected.

3.4 Concerning the term "immediately preceding washing stage" in relation with the press stage, Appellant II presented the opinion that this excluded any other stage in-between.

However, an "immediately preceding" washing stage was not mentioned in the application as filed. Instead, the language used in this respect was "preceding" washing stage (Claims 1 to 4) or "last" washing stage (Claims 7 and 10, page 9, lines 1 to 7, 21 to 25 and page 10, lines 5 to 32). Thus, the introduction of the term "immediately" before "preceding" during the examining proceedings had to be understood to clarify that the preceding washing stage in Claims 1 to 4 as filed was the last one in the washing system as mentioned in Claims 7 and 20 as filed. This was apparently also the understanding of Appellant I who raised no objection against this amendment under Article 123(2) EPC during the opposition proceedings. No other interpretation can be attributed to this term on the basis of the patent as granted where "immediately preceding" is used only in those claims which originally mentioned a preceding washing stage and where Claim 8 and the description (columns 6 and 7, paragraphs [0021], [0023] and [0025] to [0027]) still relate to the last washing stage both in a single- and multi-stage washing system. The Board, therefore, concludes that the washing stage immediately preceding the press is the last one in a multi-stage washing system or the only one in a single-stage washing system.

4. *Novelty*

4.1 Main request

Lack of novelty of the subject-matter has been objected to, *inter alia*, in view of the last embodiment out of three illustrated in Figure 10.18 on page 733 of D13.

This figure shows a washing system according to the preamble of Claim 1 and, further, that wash water is fed onto the moving wire to a zone between the stage of web formation and the press stage wherein filtrate from press is guided back to a zone ahead of the zone to which wash water is fed but after web formation. The arrangement can, thus, be considered as a single-stage/two-zones washing system according to the patent in suit wherein the press stage follows the washing stage and the filtrate from the press is guided to the first zone of the washing stage whereas fresh water is fed to the second or last zone of the washing stage. Since only one filtrate is extracted from this washing stage, the system is not fractionating. This is, however, also not required in Claim 1 of the patent in suit.

Appellant II argued that it was apparent from the long distance between the washing zone and the press that the process illustrated in that Figure of D13 included another thickening stage.

This argument is, however, irrelevant since such a stage is not excluded from the method of Claim 1. It follows from the interpretation given above in point 3.4, that the wording chosen in Claim 1

(immediately preceding) only excludes a further washing stage but not the possibility that other stages, e.g. another suction, press or thickening stage, may be present between the washing and the press.

Appellant II further argued that it was apparent from its title "Multi-press and press-filter brown stock washing" that Figure 10.18 in D13 related to a multi-stage washing system.

The Board does not accept this argument for the following reasons: it is clear from Figure 10.18 that the first embodiment showing three wash presses represents a multi-press washing system whereas the second embodiment showing a wash press and a washing filter represents a press-filter washing system, both embodiments being in line with the title of the figure. However, the last embodiment shows only one washing filter followed by a press for final filtrate extraction before pulp discharge which according to the definition given above under 3.3.1 does not form part of the washing system. Nothing indicates that this embodiment does not represent a one-stage washing system for comparison with the multi-press and press-filter embodiments as indicated on page 735 (lines 3 to 4) of D13 (see also Figures 10.23 to 10.25).

Therefore, the Board concludes that the subject-matter of Claim 1 is anticipated by the third embodiment of Figure 10.18 in D13 (Article 54 EPC).

#### 4.2 Fifth auxiliary request

The above conclusion applies also to Claim 1 of the fifth auxiliary request for the following reasons:

The way in which Claim 1 has been constructed by directly adding at the end of Claim 1 as granted the characterizing portion of Claim 2 as granted results in a claim still covering the subject-matter of granted Claim 1 as far as it relates to a single stage washing system. This claim is even broader than Claim 1 of the main request since it does not necessarily require, but also does not exclude, that the stage is divided into at least two zones and that the filtrate from the press must be guided into the first one.

The subject-matter of Claim 1 of the fifth auxiliary request is, therefore, also not found to be novel in view of the disclosure of D13.

#### 4.3 First to fourth auxiliary requests

The subject-matter of Claim 1 of any one of the first to fourth auxiliary requests is limited to fractionating washing systems either explicitly (first, second or fourth auxiliary requests) or implicitly (third auxiliary request) by requiring that separate filtrates of different concentrations are extracted from the zones (see interpretation under 3.3.3).

The parties agreed that the only prior art ever mentioned in this case which relates to fractionating washing systems is the prior art illustrated in Figure 2 and the corresponding description of the

patent in suit. The figure shows a four stage washing system wherein the filtrate from the press is guided to the last zone of the last but one washing stage and not to the last or only washing stage of the washing system, in particular not to the first zone of this washing stage as required in Claim 1 of the first to fourth auxiliary requests.

The subject-matter of these claims is, hence, novel over the cited prior art with regard to both, the single-stage and the multi-stage washing method.

5. *Inventive step*

5.1 First auxiliary request

The relevant prior art mentioned in the patent in suit relates to a multi-stage washing system as illustrated in Figures 1 and 2 (column 4, paragraph [0018] to column 5, paragraph [0019]). The technical problem to be solved in view of such prior art is said to consist in an improvement of the washing efficiency (see columns 6 and 7, paragraphs [0023] and [0025]).

5.1.1 However, Claim 1 still embraces a single-stage/two-zones washing system. Therefore, D13 qualifies as a suitable starting point for the assessment of inventive step of the embodiment relating to a single-stage washing system covered by Claim 1 since the last embodiment of Figure 10.18 on page 733 illustrates a one-stage/two-zones wash (see also 4.1 above). The subject-matter of Claim 1 differs from this embodiment only in that the wash is fractionating in which at

least two separate filtrates are extracted from the washing stage.

- 5.1.2 There is no evidence on file showing that the washing efficiency in view of that embodiment in D13 is increased by the claimed method. However, it is credible from an objective point of view that the claimed fractionation of the filtrate solves the technical problem of improving the usability of the filtrate since separate filtrates of different concentrations are obtained (see 3.3.3 above).
- 5.1.3 It remains to be decided whether or not the claimed solution is based on an inventive step in view of the cited prior art.
- 5.1.4 It is known from the prior art illustrated in Figure 2 of the patent in suit to fractionate the filtrate from the stages of a multi-stage washing system and to use the fractions in different instances by guiding them to different locations within the washing process.
- 5.1.5 The Appellant II argued that there was no reason for the skilled person to consider a fractionating multi-stage process in order to improve the non-fractionating process of D13.
- 5.1.6 However, it is obvious for a skilled person that fractionation of the filtrate into streams of different concentrations would increase the number of instances in which the filtrate can be used irrespective of whether the fractionation is carried out in a multi-stage or single-stage process.

Further, in the Board's judgment, those skilled in the art of pulp washing know about both, the single-stage and the multi-stage washing systems. Therefore, one option which a person skilled in the art would adopt in the expectation of increasing usability of the filtrate of a single-stage washing system is to fractionate that filtrate into several streams of different concentration as disclosed in the prior art illustrated in Figure 2 of the patent in suit.

5.1.7 The Board, therefore, concludes that the subject-matter of Claim 1 is not based on an inventive step as required by Article 52(1) EPC in combination with Article 56 EPC.

## 5.2 Second and third auxiliary requests

5.2.1 Claim 1 of the second auxiliary request differs from that of the first auxiliary request in that

- the feature "in which at least two separate filtrates are extracted from the or each washing stage" has been amended into "in which in the or each washing stage separate filtrates of different concentrations are extracted from at least two zones provided in the stage, one separate filtrate being extracted from each zone," and in that
- the feature "is guided to the immediately preceding washing stage" has been amended into "is guided to a first zone of the washing stage immediately preceding said suction, press and/or thickening stage,".



The information that the two separate filtrates are of different concentration and withdrawn from two different zones within the single stage of the single-staged washing system was implicitly already contained in Claim 1 of the first auxiliary request via the feature that the wash is fractionating (see above 3.3.3). Therefore, the first amendment does not change the content of that claim.

The second amendment specifies the location within the last washing stage to which the filtrate from the press is guided, i.e. to the first zone of this stage. This feature is, however, also present in the last embodiment in Figure 10.18 of D13 (see 4.1 above).

5.2.2 Claim 1 of the third auxiliary request differs from that of the first auxiliary request

- in that the first of the above features has been expressed as "the or each washing stage is divided into at least two zones from which separate filtrates of different concentrations are extracted, one separate filtrate being extracted from each zone" and
- by adding the feature "at least a portion of the clean wash liquid is guided separately to the last zone of the immediately preceding wash/washing stage".

Whilst the first amendment again does not add anything to the information contained in Claim 1 of the first auxiliary request of carrying out a fractionating wash,

the feature of the second amendment is included in the last embodiment of Figure 10.18 in D13 (see 4.1 above).

- 5.2.3 Therefore, the line of argument in relation to inventive step of the subject-matter of Claim 1 of the first auxiliary request applies as well to Claim 1 of both, the second and third auxiliary request. Consequently, the subject-matter of these claims is also not based on an inventive step as required by Article 52(1) EPC in combination with Article 56 EPC.

### 5.3 Fourth auxiliary request

The subject-matter of Claim 1 of the fourth auxiliary request is limited to a method effected in a fractionating multi-stage washing system.

- 5.3.1 According to the patent in suit and as agreed by the parties as well as by the Board, such a system is known from the prior art illustrated in Figure 2 of the patent in suit (4.3 above) and most relevant with regard to the subject-matter of Claim 1 (column 3, paragraph [0013] and columns 5 and 6, paragraphs [0019] to [0022]).

The subject-matter of Claim 1 differs from this prior art only in that the filtrate from the press is guided to the first zone of the last washing stage of the washing system instead of being guided to the last zone of the last but one washing stage as illustrated in Figure 2.

5.3.2 It is stated in the patent in suit that the technical problem to be solved in view of this prior art consists in an improvement of the washing efficiency (column 6, paragraph [0023]).

According to Appellant II it was self-evident that this technical problem is solved by the claimed way of filtrate circulation. In fact, it is indicated in the patent in suit (column 7, paragraph [0028]), that the pulp purity can be improved over the prior art by 5 to 35 %. No evidence to the contrary has been provided by Appellant I. Therefore, the Board has no reason to doubt that, in view of the prior art according to Figure 2 of the patent in suit, the above mentioned technical problem has been solved by the claimed subject-matter.

5.3.3 However, it is known from the prior art illustrated in Figure 1 of the patent in suit (see also column 5, lines 15 to 26) to operate a multi-stage washer so that fresh wash liquid is brought to the last washing stage in which the pulp is cleanest and to feed the filtrate from the last stage to the preceding stage, and so on, since this filtrate is still cleaner than the pulp in the preceding stage. In other words, it is common in the art of pulp washing to feed in a multi-stage washing system the filtrate from a stage as wash water to that stage where the pulp is dirtier than the said filtrate but cleaner than the pulp in the other preceding stages.

It is further evident from the way in which displacement washing operates (e.g. paragraphs [0008] and [0011] in the patent in suit), that the filtrate

from the press corresponds to that liquid which displaces in the pulp the liquid withdrawn as filtrate from the last washing stage. Consequently, the filtrate from the press resembles most the fresh liquid in purity and is cleaner than the filtrate from the last washing stage as well as the pulp in the last but one and any other preceding stage as correctly stated in the patent in suit (paragraph [0023]).

Thus, the filtrate from the press is most efficient for washing if used either in the last or in the last but one stage of the washing process since its purity differs least from that of the pulp in these stages. This kind of operation is shown in D12 where in a four-stage washing system the filtrate from the press is fed either together with the fresh washing water to the last washing stage (Figure 2a) or together with the filtrate from the last stage to the last but one stage while fresh water alone was guided to the last stage (Figure 1a).

It follows from the fact that the operation principle of zones and stages is the same (3.3.3 above) that the logic of this principle applies equally to a fractionating washing system covered by Claim 1 wherein each stage is divided into two zones and fresh liquid is fed at least to the second zone of the last stage. It is, therefore, evident that in such a system the purity of the filtrate from the press must be between that of the pulp in the second and first zone of the last stage and considerably higher than that of the pulp in any of the zones of the preceding stages.

Hence, it is irrelevant for the skilled person when analysing the prior art according to Figure 2 and D12 with respect to washing efficiency that - as argued by the Appellant II - D12 does not disclose a fractionating washing system wherein the stages are divided into zones.

5.3.4 The Board concludes therefore that, in view of the prior art as illustrated in Figures 1 and 2 of the patent in suit, it was apparent for someone skilled in the art that circulating the filtrate from the press to the third last zone (i.e. to the last zone of the second last stage) in the prior art according to Figure 2 is unnecessarily upstream if washing efficiency is the key issue. Consequently, a person skilled in the art would expect that circulating the filtrate from the press to the second last or last zone of the whole system as shown in D12 would increase the washing efficiency in the method disclosed in Figure 2.

5.3.5 The Appellant II finally argued that a skilled person would not consider D12 since it did not relate to the technical problem of washing efficiency but to the problem of pulp foaming caused by pressurizing with air (column 1, lines 14 to 25) and also the purpose of the press stage was not efficiency gain but consistency increase of the pulp web after washing (column 3, lines 1 to 7).

However, these arguments cannot change the above conclusion if only for the reason that the claimed manner of circulating at least a portion of the filtrate from the press to the second last zone is obvious for a skilled person already in view the above

logic of the prior art according to Figures 1 and 2 (see 5.3.4 and 5.3.5 above), irrespective of the fact that this logic is confirmed by the embodiments shown in D12.

- 5.4 For these reasons the Board finds that also the subject-matter of Claim 1 of the fourth auxiliary request is not based on an inventive step and, hence, does not comply with the requirements of Articles 52(1) and 56 EPC.

## **Order**

### **For these reasons it is decided that:**

1. The decision under appeal is set aside.
2. The patent is revoked.

The Registrar:

The Chairman:

G. Rauh

P. Krasa