IN THE HEARINGS AND MEDIATION DEPARTMENT OF

THE INTELLECTUAL PROPERTY OFFICE OF SINGAPORE

REPUBLIC OF SINGAPORE

Patent No. 159788
10 October 2018

IN THE MATTER OF

PROPOSED PATENT AMENDMENTS

BY

(1) HITACHI, LTD.
(2) MITSUBISHI SHIPBUILDING CO., LTD.

AND

OPPOSITION TO AMENDMENT BY

(1) SINGAPORE SHIPPING ASSOCIATION
(2) ASSOCIATION OF SINGAPORE MARINE INDUSTRIES

Hearing Officer: Ms See Tho Sok Yee
Principal Assistant Registrar of Patents

Representation:

Mr Alban Kang and Ms Oh Pin-Ping (Bird & Bird ATMD LLP) for the Opponents

(The Applicants are represented by Mr Gerald Koh (Thomson Legal LLP) in these proceedings but elected to only rely on written submissions and not attend the hearing)

GROUNDS OF DECISION

1 Patent monopolies – something about them attracts strong language: "incumbent on", "onus", "burden", "dilatory conduct", "stand idle", "wilful blindness", "unfair", "unreasonable", "unworthy". These words and phrases are gleaned from legal decisions of the courts, no less. And so, in the world of patent law and policy, balance needs to be

continually struck. The public interest; the interests of inventors and investors; the interests of market competitors, pull in an uneasy tension and need to be calibrated in order for the patent system to bring about greater societal good. This case is an example where discretionary factors are weighed in the balance. It considers whether an application to amend a patent specification, if it meets the statutory criteria, should nonetheless be refused under discretionary grounds. For the first time in Singapore, it falls to be decided whether the discretionary factor of "unfair advantage" may be applied to a scenario of monetisation.

2 Singapore Patent No. 159788 ("the 788 Patent"), entitled "Vessel Structure" was filed as an international application, PCT/JP2008/066536, on 12 September 2008, in the joint names of Hitachi, Ltd. ("Hitachi") and Mitsubishi Heavy Industries, Ltd., relying on Japan Patent JP 4509156 ("JP Patent"), upon which priority was claimed. The application entered the national phase in Singapore on 4 March 2010, and the 788 Patent was granted on 29 October 2010, relying on the granted claims of the JP Patent, and last renewed on 20 August 2018. The invention under the 788 Patent relates to a ballast water management system ("BWMS") for a ship. As of the date of this decision, the patent was in force. The 788 Patent was assigned from joint proprietor, Mitsubishi Heavy Industries, Ltd. to Mitsubishi Shipbuilding Co., Ltd. with effect from 1 January 2018; and the assignment recorded on 13 September 2018. The current joint proprietors of the 788 Patent are Hitachi and Mitsubishi Shipbuilding Co., Ltd. ("the Proprietors", also referred to in this opposition as "the Applicants for Amendment" and "the Applicants").

3 The 788 Patent is one of three patents pertaining to ballast water treatment, against which Singapore Shipping Association and Association of Singapore Marine Industries ("the Applicants for Revocation", also referred to in this opposition as "the Opponents") have applied for revocation. The other two patents are Singapore Patent No. 10201602094R and Singapore Patent No. 161075. Proceedings for the latter two patents were uncontested and eventually, these patents were revoked (see [2018] SGIPOS 13 and [2018] SGIPOS 14). Proceedings to revoke the 788 Patent were, on the other hand, contested, and this decision deals with an ancillary opposition to amendments proposed by the Proprietors (see [6]-[7] below).

Applicable Law and Burden of Proof

4 The applicable law is the Patents Act (Cap 221, 2005 Rev Ed) ("the Act") and the Patents Rules (Cap 221, 2007 Rev Ed) ("the Patents Rules"). Unless otherwise specified, references to "Rule" in these grounds of decision are references from the Patents Rules. The burden of proof in the present opposition falls on the Applicants for Amendment.

Procedural History

5 An application for revocation of the 788 Patent was filed jointly by the Applicants for Revocation on 22 June 2017. They were then directed to furnish copies of the relevant prior art to the Proprietors and they did so. A case management conference ("CMC") was first held on 2 August 2017, with both parties in attendance, and various procedural matters were discussed. I also impressed upon parties that they could resolve their disputes through negotiation, mediation and/or expert determination, which may prove more time- and cost-effective.

6 On 2 November 2017, the Proprietors filed their counter-statement to the revocation application, including proposed amendments to the patent specification (as allowed by Rule 80(3)) (these are set out at [20] below and are hereafter referred to as "Proposed Amendments")[1]. A second CMC was convened on 17 November 2017. I discussed the options relating to the conduct of the proceedings with the parties. At that point in time, the Applicants for Revocation indicated that they may oppose the Proprietors' Proposed Amendments. If this materialised (as it did), the parties mutually agreed to a bifurcated approach such that the opposition was dealt with first before the revocation, even though this approach would take a longer time as compared to consolidating the opposition with the revocation (with evidence and arguments based on alternative sets of patent specifications). The Proprietors' Proposed Amendments were advertised in the Singapore Patents Journal on 29 November 2017.

7 The Opponents formally objected to the Proposed Amendments by filing their notice of opposition on 26 January 2018. In turn, on 23 March 2018, the Applicants for Amendment filed their counter-statement in support of their Proposed Amendments.

8 I discussed the conduct of the case with both parties at a third CMC on 4 April 2018. Even though both parties claimed that negotiation remained an option, they were not in fact negotiating. As such, I directed the parties to file evidence concurrently, and evidence in reply thereafter. This was completed on 24 July 2018. Details are set out below under "Evidence".

9 With the close of evidence relating to this opposition, I directed parties on 24 July 2018 to state their positions in relation to various issues, to ascertain the next course of action. Based on the parties' replies on 2 August 2018, the matter was set down for hearing as there was no reasonable expectation of settlement. The Applicants for Amendment were keen to contain costs and preferred not to have a hearing. I informed the parties on 7 August 2018 that I would review their written submissions and indicate whether I had any questions for the parties to address at an oral hearing. If there are none, either or both parties may elect to rely on written submissions and not attend an oral hearing. Written submissions were filed by both parties on 10 September 2018. On 17 September 2018, I asked parties to file further submissions on various points relating to "unfair advantage" (see [10(iii)] below). The Opponents duly did so on 1 October 2018 while the Applicants regret that they were unable to make further submissions. The latter also elected to rely only on their written submissions filed on 10 September 2018 and confirmed that they would not attend an oral hearing. As the Opponents still wished to make oral submissions, the case was heard before me on 10 October 2018 with only the Opponents in attendance.

Grounds of Opposition

10 The Opponents submit that the Registrar should not exercise his discretion to allow the Proposed Amendments. Specifically, the Opponents contend that the Proposed Amendments should be rejected because:

[1] The Proposed Amendments are important to the Proprietors as part of their defence strategy against the revocation challenge, as they believe that these could help them overcome the validity objections raised by the Applicants for Revocation. Herein lies the significance of the present opposition to the Proposed Amendments, as its outcome would directly impact the main revocation application.

(i) The Applicants had failed to make full disclosure in relation to the Proposed Amendments.

(ii) There had been an undue delay on the part of the Applicants in applying for the Proposed Amendments.

(iii) The Applicants had sought to obtain an unfair advantage during the period of undue delay.

Evidence

11 The Opponents' evidence comprises five statutory declarations with the following details:

No.	Deponent	Company	Designation	Date	Reference
1	Michael Phoon Thin Kwai	Singapore Shipping Association	Executive Director	Re-executed on 17 July 2018	MPTK-1
2	Kuik Sow Hong	SembCorp Marine Limited	Vice President and Head of Research & Development	Re-executed on 19 July 2018	KSH-1
3	Goh Chee Hian	Keppel Shipyard Ltd.	Commercial Manager	Re-executed on 20 July 2018	GCH-1
4	Kuik Sow Hong	SembCorp Marine Limited	Vice President and Head of Research & Development	19 July 2018	KSH-2
5	Goh Chee Hian	Keppel Shipyard Ltd.	Commercial Manager	20 July 2018	GCH-2

All the above statutory declarations were made in Singapore.

12 The Applicants for Amendment's evidence comprises four statutory declarations with the following details:

No.	Deponent	Company	Designation	Date	Reference
1	Yoshimitsu Mihara	Hitachi, Ltd.	Department Manager, Industry & Distribution Business Unit	13 June 2018	YM-1
2	Kiyokazu Takemura	Hitachi, Ltd.	Manager, Water Business Unit	12 July 2018	KT-1
3	Thomas Philip Burke	Hitachi, Ltd.	Engineer, Water Business Unit	12 July 2018	TPB-1
4	Yoshimitsu Mihara	Hitachi, Ltd.	Department Manager, Industry & Distribution Business Unit	12 July 2018	YM-2

All the above statutory declarations were made in Japan.

13 No other evidence, such as oral evidence at the hearing, was adduced. The above tabulation therefore reflects the complete set of evidence for this opposition.

Factual Background

14 The 788 Patent was granted in Singapore under the 'self-assessment' system, and therefore was not subject to local examination in Singapore. Instead, the Applicants relied upon the claims of their JP Patent for allowance in Singapore, in accordance with Section 29(1)(c)(ii) of the Act. The granted claims of the 788 Patent were therefore identical to those of the granted JP Patent. After grant, the JP Patent was the subject of three invalidation trials.

15 The first invalidation proceedings (2011-800251) were commenced on 6 December 2011 by Shin Kurushima Dockyard Co., Ltd. The latter alleged that the claims lacked novelty, inventive step, support and clarity. In response, the Applicants made amendments to claim 1 and claim 7, and cancelled claim 6. Claims 2-5 were unamended, and therefore claim 7 was renumbered as new claim 6, resulting in claims 1-6. The Japan Patent Office ("JPO") allowed claims 1-5 on 26 October 2012, but found that (renumbered) claim 6 lacked support and clarity. The Applicants appealed this decision to the Japanese Intellectual Property (IP) High Court (Case number 2012 (Gyo-Ke) 10424), and on 10 September 2013 the Court ruled in their favour and deemed (renumbered) claim 6 to be allowable. An appeal of this decision, by Shin Kurishima Dockyard Co., Ltd, was rejected by the Japanese Supreme Court on 6 February 2014, and the case was remitted to the JPO. The JPO deemed (renumbered) claim 6 valid, following the High Court decision, and therefore claims 1-6, as submitted on 26 March 2012, were maintained.

16 A second invalidation trial (2011-800262) ran concurrently with the first, brought by a number of third parties, and commenced on 22 December 2011. The patent was challenged on the basis that claims 1-7 lacked inventive step and contained added subject matter. The Applicants made the same amendments to the claims as in the first invalidation trial, on 10 April 2012, and similarly the JPO found claims 1-5 to be allowable but (renumbered) claim 6 to be invalid, on the basis that it contained added matter, in their decision of 5 November 2012. Again, the Applicants appealed to the Japanese IP High Court (case number 2012 (Gyo-Ke) 10425), arguing that the JPO erroneously determined the issue of added matter. The High Court agreed with the Applicants that (renumbered) claim 6 did not contain new matter, and following another failed appeal to the Japanese Supreme Court, the case was again remitted to the JPO. Claims 1-6 were then deemed to be valid by the JPO, in its decision of 2 May 2014.

17 Further invalidation proceedings were brought on 24 February 2014 (case number 2014-800029) by a number of third parties ("the plaintiffs"), on the basis that claims 1-6 lacked an inventive step and there was "in-compliance correction (*sic*)" after grant. I assume that this meant that the post-grant amendments were not allowable. In response to this challenge, the Applicants amended the claims twice, first on 13 May 2014, and then again on 30 March 2015. It is unclear from the submissions provided what the reasons were for the second set of amendments; I can only observe that these amendments were separate from, and as such did not incorporate, the amendments submitted on 13 May 2014, yet were significantly narrower in scope. The claims of 30 March 2015 were deemed allowable by the JPO in its decision of 19 October 2015, and an appeal of this decision to the Japanese

IP High Court by the plaintiffs (case number 2015 (Gyo-Ke) 10239) was dismissed on 26 December 2016. Claims 1-6 filed at the JPO on 30 March 2015 are the claims currently in force in Japan, and are identical to the proposed amendments before IPOS.

18 For convenience, the chronology of events before the JPO and the Japanese courts is set out below:

Date	**Event**
1st Invalidation trial 2011-800251	
6/12/2011	Patent invalidation trial 2011-800251 commenced before the JPO; alleged claims 1-7 lacked novelty, inventive step, support and clarity
26/3/2012	Claims amended (now claims 1-6)
26/10/2012	JPO found claims 1-5 to be valid; (renumbered) claim 6 invalid due to lack of support and clarity
5/12/2012	Patentee appealed to Japanese Intellectual Property (IP) High Court (Case 2012 (Gyo-ke) 10424) on the basis that the JPO erroneously determined the lack of support and clarity requirement in its decision of 26/10/2012
10/09/2013	Japanese IP High Court overturned the decision of the JPO in relation to the validity of (renumbered) claim 6
24/9/2013	Appeal of the judgment of the IP High Court to the Japanese Supreme Court
6/2/2014	Appeal rejected and case remitted to the JPO
7/5/2014	JPO decided (renumbered) claim 6 is valid, and claims 1-6 (as amended on March 26 2012) were maintained
2nd Invalidation trial 2011-800262 (ran concurrently with 2011-800251)	
22/12/2011	Patent invalidation trial 2011-800262 commenced before the JPO; alleged claims 1-7 lacked inventive step and contained added matter
10/04/2012	Claims amended (now claims 1-6; same amendments as in 2011-800251)
5/11/2012	JPO found claims 1-5 to be valid; (renumbered) claim 6 invalid due to added matter
5/12/2012	Patentee appealed to Japanese IP High Court (Case 2012 (Gyo-ke) 10425) on the basis that the JPO erroneously determined added matter in its decision of 5/11/2012
10/9/2013	IP High Court overturned the decision of the JPO in relation to the validity of (renumbered) claim 6
24/9/2013	Appeal of the judgment of the IP High Court to the Japanese Supreme Court
6/2/2014	Appeal rejected and case remitted to the JPO
2/5/2014	JPO decided (renumbered) claim 6 is valid, and claims 1-6 (as amended on April 10 2012) were maintained
3rd Invalidation trial 2014-800029	
24/2/2014	Patent invalidation trial 2014-800029 commenced before the JPO; alleged claims 1-6 lacked inventive step and incompliance correction after grant [*sic*]
13/5/2014	Claims 1, 4 & 6 amended
30/3/2015	Claims 1 & 6 amended further, new amendment to claim 2

19/10/2015	JPO found claims 1-6 to be valid
20/11/2015	Plaintiffs appealed to Japanese IP High Court (Case 2015 (Gyo-ke) 10425) seeking rescission of the JPO decision of 19/10/2015
26/12/2016	IP High Court judged that the plaintiffs' appeal be dismissed. Therefore claims submitted on 30/3/2015 were deemed to be valid

19 In addition to Japan, there are corresponding patents in China, Korea and India. The claims filed at PCT stage were rejected in these three jurisdictions on the basis that they lacked an inventive step. At this time, the application in India is still pending, whereas the corresponding patents have been granted in China and Korea. In China, the claims were amended three times during the examination process in order to overcome the examiner's objections to lack of an inventive step, and was ultimately granted as CN patent number 200880106360.2 on 25 February 2015. It consists of three claims, which are of a narrower scope than the claims of the 788 Patent (but broader in scope than the Proposed Amendments). Similarly, the claims of the Korea patent, granted as number 10-1037570 on 8 March 2011, are narrower in scope than those of the 788 Patent. Again, this was a result of the examination process in Korea, where the examiner also raised objections under lack of inventive step. However, these claims are also broader in scope than the Proposed Amendments.

Proposed Amendments

20 The Applicants for Amendment propose to amend the 788 Patent as follows:

1. A vessel including a ballast tank for controlling the attitude of a hull and for ensuring the hull's stability; a ballast-water treatment apparatus for being supplied with ballast water and for treating the ballast water to eliminate or kill microorganisms therein when the ballast water is taken up ~~or released~~; a ballast pump provided in ballast-water piping system for taking up the ballast water through an intake port when the ballast water is taken up and for releasing the ballast water from the ballast tank through a release port when the ballast water is released, and installed in an engine room,

   wherein the ballast-water treatment apparatus is coupled via a treatment-apparatus inlet piping and a treatment-apparatus outlet piping to the ballast-water piping system for supplying the ballast water taken up through the intake port into the ballast tank;

   wherein an open/close valve is disposed each in the treatment-apparatus inlet piping and the treatment-apparatus outlet piping, the open/close valve being open when the ballast water is taken up and being closed when the ballast water is released,

   wherein an open/close valve is further provided in the ballast-water piping system between a connection point of connecting the treatment-apparatus inlet piping with the ballast-water piping system and a connection point of connecting the treatment-apparatus outlet piping with the ballast-water piping system, the open/close valve being closed when the ballast water is taken up and released,

   wherein a check valve is further disposed in the ballast water piping system at a downstream side of the ballast pump and an upstream side of the connection point of connecting the treatment-apparatus inlet piping with the ballast-water piping system, the check valve only permitting a flow in the direction from the ballast pump toward the ballast water treatment apparatus;

   wherein the ballast-water treatment apparatus to which the ballast water is supplied is disposed in a steering gear room at the rear of the vessel;

wherein the steering gear room is located above a vessel draft line so that the ballast water can be released from the ballast-water treatment apparatus to the outside of the vessel in an emergency.

2. The vessel according to Claim 1, wherein the ballast-water treatment apparatus has a divided structure consisting of a first treatment unit and a second treatment unit, the first treatment unit is disposed in the steering gear room or on a deck provided in an inner space thereof, and the second treatment unit is disposed on a floor of the steering gear room.

3. The vessel according to Claim 1 or 2, wherein a stern void space such as an aft peak tank is used as a buffer tank of the ballast-water treatment apparatus.

4. The vessel according to Claim 1, wherein the steering gear room is not an explosion-proof area.

5. The vessel according to Claim 1, wherein the steering gear room is adjacent to the engine room, in which ~~a~~ the ballast pump is installed.

~~6. The vessel according to Claim 1, wherein the steering gear room is located above the vessel draft.~~

6. ~~7.~~ A vessel including a ballast tank for controlling the attitude of a hull and for ensuring the hull's stability; a ballast-water treatment apparatus for being supplied with ballast water and for treating the ballast water to eliminate or kill microorganisms therein when the ballast water is taken up ~~or released~~; a ballast pump provided in a ballast-water piping system for taking up the ballast water through an intake port when the ballast water is taken up and for releasing the ballast water from the ballast tank through a release port when the ballast water is released, and installed in an engine room,

wherein the ballast-water treatment apparatus is coupled via a treatment-apparatus inlet piping and a treatment-apparatus outlet piping to the ballast-water piping system for supplying the ballast water taken up through the intake port into the ballast tank;

wherein an open/close valve is disposed each in the treatment-apparatus inlet piping and the treatment-apparatus outlet piping, the open/close valve being open when the ballast water is taken up and being closed when the ballast water is released,

wherein an open/close valve is further provided in the ballast-water piping system between a connection point of connecting the treatment-apparatus inlet piping with the ballast-water piping system and a connection point of connecting the treatment-apparatus outlet piping with the ballast-water piping system, the open/close valve being closed when the ballast water is taken up and released,

wherein a check valve is further disposed in the ballast water piping system at a downstream side of the ballast pump and an upstream side of the connection point of connecting the treatment-apparatus inlet piping with the ballast-water piping system, the check valve only permitting a flow in the direction from the ballast pump toward the ballast water treatment apparatus;

wherein the ballast-water treatment apparatus to which the ballast water is supplied is disposed at the rear of the vessel and disposed in not an explosion-proof area and disposed above a vessel draft line and below the top of the ballast tank,

wherein, with the ballast-water treatment apparatus being disposed above the vessel draft line, the ballast water can be released from the ballast-water treatment apparatus to the outside of the vessel in an emergency.

21 The above Proposed Amendments to the claims are identical to those amendments submitted to the JPO on 30 March 2015 and deemed to be valid by the JPO on 19 October 2015. No amendments to the description have been proposed.

MAIN DECISION

Approach to Post-Grant Patent Amendments

22 As an overview, the following considerations apply to an application to amend a granted patent:

(i) Specific criteria in Section 84(3) of the Act on allowable amendments to patent specifications

The provision reads:

> No amendment of the specification of a patent shall be allowed under section 38(1), 81 or 83 if it —
>
> (a) results in the specification disclosing any additional matter; or
> (b) extends the protection conferred by the patent.

As such, amendments can only be made if they do not disclose any matter that was not present, explicitly or implicitly, in the patent application as filed.

Furthermore, amendments are not allowed if they broaden the scope of protection of the patent such that the claims encompass matter that was not within the scope of the claims as granted. In general, this means that amendments made to a granted patent are expected to narrow the scope of the claims.

The above has not been pleaded by the Opponents and is not in issue here.

(ii) Baseline criteria in Section 25(5)(b), (c) for patent claims in general

In addition to whether the amendments are allowable (above), the patent claims must meet the baseline criteria for patent claims in general, as set out under Section 25(5)(b), (c) of the Act:

> The claim or claims shall —
> …
> (b) be clear and concise;
> (c) be supported by the description; …

The pre-grant requirements of the clarity of and support for the claims extend post-grant, and therefore amendments to claims that result in a lack of clarity or a lack of support will not be allowed.

As with (i) above, this baseline criteria relating to patent claims in general is also not in issue here.

(iii) Residual discretionary criteria in Section 83(1)

Section 83(1) of the Act provides residual discretion for the court or Registrar to allow or refuse amendments to a patent during infringement or revocation proceedings:

> In any proceedings before the court or the Registrar in which the validity of a patent is put in issue, the court or, as the case may be, the Registrar *may*, subject to section 84, allow the proprietor of the patent to amend the specification of the patent in such manner, and subject to such terms as to the publication and advertisement of the proposed amendment and as to costs, expenses or otherwise, as the court or Registrar thinks fit.
>
> (*italics* mine)

The grounds of the opposition before me are based on discretionary criteria, as pleaded by the Opponents (see [10] above). The power of the Registrar (and court) to allow amendment to the specification of a granted patent is ultimately discretionary. Even if the statutory criteria in (i) and (ii) above have all been met, the Registrar here has a general discretion to refuse amendment because of the language of Section 83(1): "the Registrar *may*".

23 The Court of Appeal in ***Warner-Lambert Company LLC v Novartis (Singapore) Pte Ltd*** [2017] 2 SLR 707 ("***Warner-Lambert CA***") affirmed the above at [36], citing the High Court decision in ***Ship's Equipment Centre Bremen GmbH v Fuji Trading (Singapore) Pte Ltd*** [2015] 4 SLR 781 ("***Ship's Equipment***"). In the latter case, the rationale of this general discretion was reiterated at [133] as follows:

> To sum up, it is important to bear in mind the underlying rationale of the discretion to refuse an application to amend. This is well explained by Aldous LJ in *Kimberly-Clark Worldwide Inc v Procter & Gamble Limited* [2000] FSR 235 at 248 as the "desire to protect the public against abuse of monopoly". Pumfrey J in *Instance* at [37] described it as "a desire to ensure that patentees do not obtain an advantage which is unfair from their failure to amend" and went further to consider that it may be "to punish patentees for the unreasonableness of their conduct even when no advantage has in fact been gained.

24 The factors to be considered in an application to amend a patent post-grant have been set out in ***Warner-Lambert CA*** at [37]:

> The factors to be considered in the exercise of this discretion were set out by Aldous J (as he then was) in *Smith Kline & French Laboratories Limited v Evans Medical Limited* [1989] FSR 561 ("*Smith Kline & French Laboratories Ltd*") at 569, endorsed by this court in *FE Global Electronics Pte Ltd v Trek Technology (Singapore) Pte Ltd and another appeal* [2006] 1 SLR(R) 874 ("*FE Global*") at [29] and applied by the High Court in *Novartis AG and another v Ranbaxy (Malaysia) Sdn Bhd* [2013] 2 SLR 117 at [9] ("*Novartis AG v Ranbaxy*"). These factors are:

(a) whether the patentee has disclosed all the relevant information with regard to the amendments;

(b) whether the amendments are permitted in accordance with the statutory requirements;

(c) whether the patentee delayed in seeking the amendments (and, if so, whether there were reasonable grounds for such delay);

(d) whether the patentee had sought to obtain an unfair advantage from the patent; and

(e) whether the conduct of the patentee discourages the amendment of the patent.

25 These factors are intended to reflect the underlying rationale of the discretion to allow or refuse an application to amend a patent, that is, to ensure that the patentee does not abuse his monopoly, and to protect the public against such abuse. The factors are neither conjunctive nor disjunctive. Instead, they are considerations to be taken into account when the Registrar (or the court) determines whether or not to exercise discretion to allow post-grant amendments. As observed above, the instant opposition relies on grounds based on discretionary criteria and not on statutory criteria (the latter under Sections 25 and 84 of the Act). I will therefore address each of these factors in turn, bearing in mind this underlying rationale.

Failure to Make Full Disclosure

Parties' Submissions

26 The Opponents submit that there is a lack of full disclosure because the Applicants have not fully disclosed the relevant matters relating to the prosecution of the corresponding patent applications. Specifically, the Opponents argue that the Applicants have not disclosed:

(i) the prior art cited by the Examiners of the corresponding applications in Korea or China in support of their objections to the claims on the basis of lack of inventive step;
(ii) the advice that the Applicants had received from their patent agents leading up to the amendments made to these corresponding applications in response to the objections;
(iii) the prior art cited in the first two patent invalidation proceedings in Japan; or
(iv) the advice that the Applicants had received from their patent agents leading up to the amendments made to the corresponding patent in Japan in the course of these proceedings.

27 On the other hand, the Applicants contend that they have indeed given a reasonable disclosure of information for the Opponents to access prior art cited in the patent family. They point out that the full patent family details, application numbers etc. were disclosed in their counter-statement, as well as all relevant office action dates and outcomes in association with the other members of the patent family. The Applicants also comment that any prior art cited in the office actions would be, by definition, publicly available and therefore can easily by obtained by interested parties. Furthermore, the prior art disclosed

in the Opponents' statement of grounds for revocation included those documents cited during proceedings in Japan. The Applicants say this confirms that the relevant documents were readily accessible to interested parties. They also argue that full disclosure does not go as far as requiring express listing of all prior art cited in office actions of foreign patent family members, but they did agree to provide such a list to the Registrar if so required.

28 As regards the advice from patent agents, the Applicants take the position that advice from patent agents is privileged and need not be disclosed. The duty of full disclosure does not compel the disclosure of privileged documents. If the privilege is not waived, then the Registrar cannot draw an adverse inference against this.

Analysis

29 In light of the submissions from both parties, what I need to determine is whether the Applicants have indeed provided a full disclosure of all relevant matters leading up to the proposed amendments. In this regard, in ***Oxford Gene Technology Ltd v Affymetrix Inc. (No.2)*** [2001] RPC 18 ("***Oxford Gene Technology***"), the UK Court of Appeal clarified, at [20], that any obligation upon a patentee to trawl through his documents to determine their relevance to an amendment would result in considerable expense and "*is not required under modern principles*". Instead, the court opined that "*The obligation of good faith requires the patentee to put forward correct reasons for the amendment. If there be facts relevant to the exercise of the discretion for those reasons then those facts need to be put before the court.*" Aldous LJ went on to point out, at [21], that there is no obligation upon a patentee in amendment proceedings to waive privilege in respect of any document, and even though the patentee's case may be advanced by waiver of privilege; the decision whether to waive privilege is one for him and not for the court.

30 In their skeletal submissions, the Opponents argue that only the bare grounds upon which the claims were objected to, and the amendments made in response to these objections, were provided in the Applicants' counter-statement. Even though the list of prior art was provided upon the Opponents' request (see Applicants' letter of 18 April 2018), they remained of the opinion that the limited information did not enable the Registrar to ascertain whether the Applicants had been made aware of the relevant prior art or that the claimed invention may be invalid during prosecution of the corresponding applications. The Opponents see this as a choice, on the part of the Applicants, to sweep matters under the carpet and avoid the obligation of making a full disclosure.

31 The crux of the arguments from the Opponents, therefore, is that the Applicants did not provide sufficient details relating to the different prosecutions, and that this in itself amounted to failure to disclose relevant matters. This includes both that which the Applicants disclosed in relation to the reports that they received from the patent / intellectual property offices of the different jurisdictions during proceedings both pre- and post-grant, as well as the advice that they received from their attorneys during these proceedings. There are four different prosecutions in this case. The most relevant, to my mind, are the invalidity challenges before the JPO and the Japanese IP High Court, and particularly the final challenge which concluded on 19 October 2015, as these are challenges based upon the claims of the 788 Patent as they stand today. The remaining three prosecutions are pre-grant.

32 I will start with the pre-grant prosecutions in Korea, China and India as these can be discussed together. I agree with the Opponents that it would have been useful for the Applicants to have submitted the relevant reports that formed part of the examination process, as this would clearly indicate why the amendments were made to the claims in the different jurisdictions. However, these reports generally are available through the respective open dossier systems of the different jurisdictions, as pointed out by the Applicants in their written submissions. Therefore, I agree with the Applicants that these reports, and with them the reasons for amendments in the different jurisdictions during the pre-grant process, would have been retrievable by any interested third party. As such, I doubt the Applicants were deliberately withholding information with regard to the pre-grant prosecutions in these jurisdictions.

33 I should comment upon the Opponents' reference to Mr Yoshimitsu Mihara's first Statutory Declaration filed by the Applicants (see [12] above, where this statutory declaration is referenced as "YM-1"). YM-1 indicated that the Applicants felt that the prior art cited by the Korean examiners was not strong, but in order to expedite proceedings, they amended the patent to overcome this prior art objection, whilst filing a divisional application to cover further embodiments: at [5]-[6]. However, YM-1 then went on to discuss evidence in relation to the divisional application in Korea, and not the parent application, which is directly related to the 788 Patent. Exhibited as Annex 1 to YM-1, Mr Mihara provided details of the communication between the Applicants and their attorney, again in relation to the divisional application. This, in the opinion of the Opponents, suggests that the Applicants have something to hide.

34 In their submissions, the Opponents refer to ***Oxford Gene Technology***, where Brooke LJ commented, at [53], that the difficulties faced by the patentee in ***Hsiung's Patent*** [1992] RPC 497 "*stemmed from the fact that he had failed to disclose all relevant non-privileged matters in relation to the points in issue, and in so far as he elected to waive privilege in relation to some privileged correspondence, that correspondence raised more questions that (sic) it answered*". In the present case, the Opponents argue that the facts in ***Hsiung's Patent*** were on all fours with the facts here, and that the disclosure of the communication between the Applicants and their attorney in relation to the divisional application but not the parent application (which the Opponents had put in issue) raises more questions than are answered.

35 I agree that it is unclear why YM-1 discussed the Korean divisional application, and provided correspondence in relation to this. However, this, without more, cannot be said to "raise more questions than are answered". Furthermore, I am not persuaded that the Applicants were being intentionally disingenuous here. The prosecution history is generally available on file and therefore it is difficult to see what the Applicants would be "attempting to hide" by discussing the divisional rather than the parent application. Whilst the advice given to the Applicants by their agents in relation to the amendments to the parent application has not been provided, the Applicants have summarised the prosecution history in their counter-statement (to the application for revocation). From this, it is clear that the claims were amended in relation to the objections of inventive step raised in relation to the prior art cited in the examiner's reports. Moreover, the Applicants have provided the dates of these reports and the submitted amendments (which are also publicly available) and therefore it can also be deduced when the Applicants became aware of the prior art and when the amendments were deemed necessary.

36 In my opinion, this distinguishes the present case from the factual matrix in ***Hsiung's Patent***, where there were large periods of time with no indication of how the patentee was being advised in relation to the prior art or how the patentee was asserting the monopoly of his patent. There are no such periods of time here, and the Applicants have provided sufficient information to allow a reasonable assumption to be made regarding when they were aware of relevant prior art and the amendments made in an attempt to overcome it. As such, I do not agree with the Opponents' assertion that the Applicants have not provided sufficient disclosure in relation to the proceedings before the Korean Intellectual Property Office, or likewise those in China and India.

37 I now turn to the proceedings before the JPO. As the 788 Patent was granted based upon the granted claims of the corresponding JP Patent, and the Proposed Amendments are identical to the eventually allowed claims before the JPO, disclosure of the Japan proceedings here is the most relevant. In their counter-statement (to the application for revocation), the Applicants provide a detailed account of the proceedings before the JPO, including the referrals to the Japanese IP High Court; and Annexes 2 and 3 of YM-1 outline the decision of the IPO High Court in 2012 (Gyo-Ke) 10424 and 2012 (Gyo-Ke) 10425. Admittedly, the entire file history of these proceedings has not been provided, but, similar to the pre-grant proceedings discussed above, this, including details of the cited prior art[2], is publicly available. However, even without this detail, I find there is sufficient information provided in order for me to ascertain what amendments were made to the JP Patent in response to what action, and, most importantly, how the present set of claims was arrived at.

38 With regard to the disclosure of the advice that the Applicants received from their patent attorney in relation to the amendments needed, I refer again to the judgment of Aldous J in ***Oxford Gene Technology***, where, at [21], he made clear that there was "*no obligation upon a patentee in amendment proceedings to waive privilege in respect of any document*". Two ancillary principles flow from Aldous J's articulation. First, "*the maintenance of privilege does not enable the court to draw an adverse inference against the person who maintains his privilege*": [21] of ***Oxford Gene Technology***. Second, instead of an obligation to waive privilege and trawl and disclose all documents including privileged advice, as first noted at [29] of this decision, "*(t)he obligation of good faith requires the patentee to put forward correct reasons for the amendment. If there be facts relevant to the exercise of the discretion for those reasons then those facts need to be put before the court*": [20] of ***Oxford Gene Technology***.

39 Here, I find that the Applicants have put forward all the facts relevant to the reasons for the Proposed Amendments. Therefore, the Opponents have not established that the Applicants have not fully disclosed these matters.

<u>Undue Delay</u>

Parties' Submissions

40 As observed above, there are corresponding patents and patent applications pending in Japan, Korea, China and India. The pre-grant prosecutions in Korea, China and India have

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[2] See, for example http://www.jpo.go.jp/torikumi_e/t_torikumi_e/pdf/decisions/2014_800029_e.pdf which provides the decision of invalidation trial 2014-800029.

resulted in objections based on lack of inventive step, which led to amendments to the claims in these jurisdictions. Post-grant challenges to the claims of the JP Patent, upon which the claims of the 788 Patent are based, led to significant amendments to the claims, culminating in the allowance of the claims that are currently submitted as the Proposed Amendments. The Opponents argue, essentially, that due to the multiple rounds of amendment in these different jurisdictions, the Applicants were aware of the need to amend as early as 8 March 2011, which is several years before the actual application to amend (on 2 November 2017) in Singapore. Furthermore, according to the Opponents, this delay is unjustified given the small number of cases and countries involved. They argue that there has been an undue delay in submitting the Proposed Amendments.

41 The Applicants, however, argue that they had good reason to refrain from submitting amendments based upon ongoing prosecutions in Korea, China and India. Given that the 788 Patent was granted relying upon the claims granted in Japan, the Applicants considered that it was legitimate for them to defer amending the Singapore patent while awaiting developments at the JPO. The Applicants felt that they were only in a position to consider amendments to the 788 Patent after the final decision of the Japanese IP High Court, and, ultimately, after the period for appeal of this result had elapsed (i.e. 10 January 2017). They admit that a delay in requesting amendment followed, but this was due to conflict of interest on the part of their then patent agent, Allen and Gledhill LLP, who was Honorary Legal Advisor to one of the Opponents (Singapore Shipping Association). One of Allen and Gledhill LLP's partners, Mrs Gina Lee-Wan, co-head of Allen and Gledhill LLP's Maritime and Aviation practice, was also co-opted as a Singapore Shipping Association Councillor. Due to internal restructuring issues, and the fact that it was towards the end of the financial year in Japan, the Applicants claim that it took some time to eventually appoint a new patent agent to assist them in making amendments, and, by then, dealing with the revocation proceedings that had since been initiated.

Analysis

42 As the Court of Appeal in ***Warner-Lambert CA*** opined at [41]:

> … the patentee should not be entitled to stand idle after discovering the need for amendment: see *Novartis AG v Ranbaxy* at [48] (in the context of the discovery of relevant prior art):
>
> > At the end of the day, it must be emphasised that a patentee must act expeditiously in taking out an application to amend its patent claims upon discovering relevant prior art. Any delay in taking out an application to amend must be capable of explanation, and the patentee cannot persist in refusing to amend its patent specifications in an unamended and suspect form despite becoming aware of prior art …

43 I take further guidance from ***Matbro Limited v Michigan (Great Britain) Limited and Anor*** [1973] RPC 823 ("***Matbro***") where the court considered (at p833) that mere delay is not, of itself, necessarily sufficient to justify refusal of amendment. In particular, Graham J reasoned (at p834):

> I think these cases do support what I have said above in regard to delay and detriment and also draw a clear distinction between instances where a patentee knows of prior art

which he genuinely, and quite properly in the circumstances, thinks is irrelevant, and other instances where, though he learns of or has been warned of objections which are available against his patent as a result of prior art, yet he takes no steps to put his specification right by way of amendment, or still worse, knowingly persists in retaining it in the unamended and suspect form. In the latter cases delay is culpable because potential defendants and the general public are entitled to plan their activities on the assumption that the patentee, though warned, has decided not to amend. If the patentee, by his conduct, lulls the public into a false sense of security he cannot thereafter be allowed to change his mind and ask for amendment, or at any rate without adequate protection being granted to the public.

The facts of the case under consideration in ***Matbro*** were such that even though the patentees knew of the prior art in question for some time before their application to amend, they did not think, nor were they advised until shortly before that application to amend, that amendment was prudent.

44 I think there is no doubt that the Applicants would have been aware, from as early as the first amendments made to the granted JP claims (on 26 March 2012), that any patents relying upon these claims would possibly require a similar amendment or face challenge in those jurisdictions where they had been granted. The subsequent pre-grant proceedings in Korea, China and India would have further alerted the Applicants to the potential need to amend to overcome prior art. Later amendments, finally allowed in Japan following the conclusion of the third invalidation proceedings before the Japanese IP High Court on 26 December 2016, are a further warning of a need to amend. Nevertheless, in line with the Court of Appeal decision in ***Warner-Lambert CA***, it is necessary to consider whether there is a reasonable explanation for the delay in amendment.

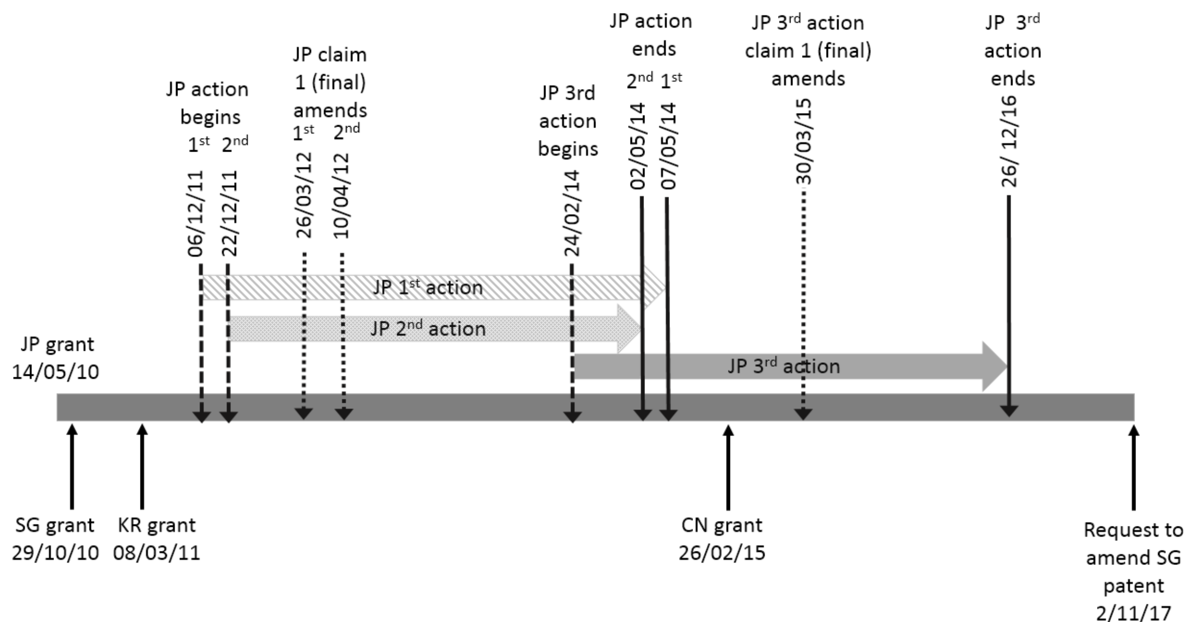
45 The requirements for amendment post-grant are stricter than those pre-grant. Not only must the amendments not introduce new subject matter into the patent, but more importantly, any amendment must not extend or shift the scope of protection. That means that a claim cannot be broadened after grant, nor can the scope of protection be shifted laterally. Therefore, before making any amendment post-grant, the patentee needs to be certain that the scope of protection is sufficiently broad to allow it to maintain a monopoly commensurate with the contribution that it has made to the art, whilst ensuring the patent is sufficiently narrow to overcome any issues relating to validity. This is in addition to the fact that the Registrar has discretion in allowing any amendment, and possible opposition to those amendments.

46 Taking this into consideration, I think it would, in general, be unreasonable for the Applicants to amend a granted patent in view of pre-grant examination proceedings elsewhere, unless those proceedings had resulted in an allowable claim set. Given that, at the time the Applicants requested amendment to the 788 Patent, the corresponding application was still pending in India, I do not think that it would be reasonable to expect them to amend their patent in view of the amendments made there. As such, I do not consider that proceedings before the Indian patent office suggest that there is an undue delay in requesting amendment in Singapore, and therefore will not further consider the arguments surrounding the patent application in India.

47 In view of this, I will focus upon whether there was a delay in the request for amendment in view of the culmination of the post-grant proceedings in Japan and the allowed claims

in Korea and China. The amendments made to the claims of the JP Patent as a result of the first and second invalidation proceedings (on 26 March 2012 and 10 April 2012, respectively) are similar to the amendments made, and ultimately allowed, in Korea and China. These amendments essentially further define the location of the ballast water treatment apparatus to be in not an explosion-proof area and above the vessel draft line.

48 A timeline of significant events in the jurisdictions of Japan, Korea and China is set out below:



49 From the above timeline, it is clear that the first indication that the claims of the 788 Patent may be invalid would have followed the grant of the corresponding patent in Korea on 8 March 2011. The latest indication that the claims would most likely require amendment is following the conclusion of the third invalidation trial in Japan on 26 December 2016. In between those dates, amendments were made to the JP Patent as a result of the first and second invalidation trials, as well as to the patent application in China such that an allowable claim set was reached there.

Korea

50 The Opponents assert that the Applicants should have amended the 788 Patent at the point where the corresponding patent was granted in Korea, and as such this amounts to a delay of 6 years and 8 months. However, the Applicants consider that the facts surrounding the amendments in Korea were particular to Korea only, and that (to their mind) the prior art cited by the Korean Intellectual Property Office was not strong. In this regard, the Applicants refer to ***Novartis AG and another v Ranbaxy (Malaysia) Sdn Bhd*** [2013] 2 SLR 117 at [9] ("***Novartis v Ranbaxy***"), where, at [46], the High Court took the view that prior art necessitating amendment in foreign jurisdictions did not necessarily mean that an application to amend should be made immediately in Singapore. Nevertheless, in order to expedite proceedings, the Applicants amended the claims as required by the examiner to enable grant of the patent, whilst at the same time filing divisional applications in order to try to capture the desired embodiments. The details of these divisional applications can be seen in the Applicants' counter-statement (to the application for revocation).

51 The Applicants' arguments in this regard are reasonable. It is not unusual for applicants to narrow claims in order to obtain a quick grant of a patent, with the parallel filing of a divisional application in order to attempt to claim a broader or alternative embodiment. I note that in his declaration YM-1 at [6], Mr Mihara acknowledged it was he who made the decision to comply with the Korean examiner's wishes, and make the necessary amendments to expedite grant. However, as observed in [33] above, this testimony is in relation to the grant of the divisional application (which took place on 2 August 2013), and not to the parent application. Nevertheless, I do not think that this testimony detracts from the fact that the Applicants did indeed pursue alternative embodiments in divisional applications after the grant of the first patent in Korea. In light of this, I disagree with the Opponents that the Applicants should have amended the patent immediately upon grant of the corresponding patent in Korea. Given that they were pursuing alternative embodiments, I think it was reasonable for them to at least gauge how the examination would proceed for these divisional applications before committing to amending their granted patents in other jurisdictions.

Japan

52 Nine months after the grant of the Korea patent, and whilst prosecution of the divisional applications was ongoing, the first invalidation proceedings were initiated before the JPO. The second invalidation proceedings began shortly after that. The Applicants point out that when the first patent invalidation proceedings started in Japan, there were pending patent applications in Korea, China and India, each with differing claim scopes, and this is justification to refrain from amending the claims of the 788 Patent. They also submit that since the 788 Patent was granted relying upon the JP Patent, the status of the latter patent was the most relevant to be taken into account.

53 It is clear from the timeline that litigation before the JPO was a protracted event, beginning with the first action in December 2011, and ending with the conclusion of the third action in December 2016. The third action before the JPO was initiated before the first two actions were officially concluded. In their counter-statement (to the opposition to amendment), the Applicants consider that they could not have known whether the amendments put forward for the third action would have been allowable in Japan. They point out that, given that the amendments were in part accepted and in part rejected by the JPO during each of the proceedings, and as the subsequent appeals to the Japanese IP High Court illustrate, they were in no position to known the nature of the claims that would ultimately be allowed. As such, it was legitimate for them to defer amendment of the 788 Patent.

54 I agree with this, in principle. There was no clear break in proceedings where the Applicants could have definitively known the scope of the claims that would ultimately be allowed. I also refer to ***Novartis v Ranbaxy*** where Lee J agreed that there was no undue delay on the part of the plaintiff in not amending the Singapore patent in light of prior art, given that they were awaiting the outcome of opposition proceedings before the EPO. Specifically, he considered, at [46], that "*The fact that the European Patent Office proceedings raised prior art which necessitated an application to amend the specifications of the European patent in relation to the same invention did not necessarily mean that the plaintiffs ought to immediately take out an application to amend in Singapore. It was perfectly reasonable for the plantiffs to endeavour to first prosecute the amendment in Europe, and then take out an application in Singapore after obtaining the ruling upon its amendment application,*

when the necessity arose". In my opinion, the facts of the present case are on par with those of ***Novartis v Ranbaxy***, at least insofar as the Applicants were awaiting the outcome of the invalidation trials in Japan before considering amending the 788 Patent.

China

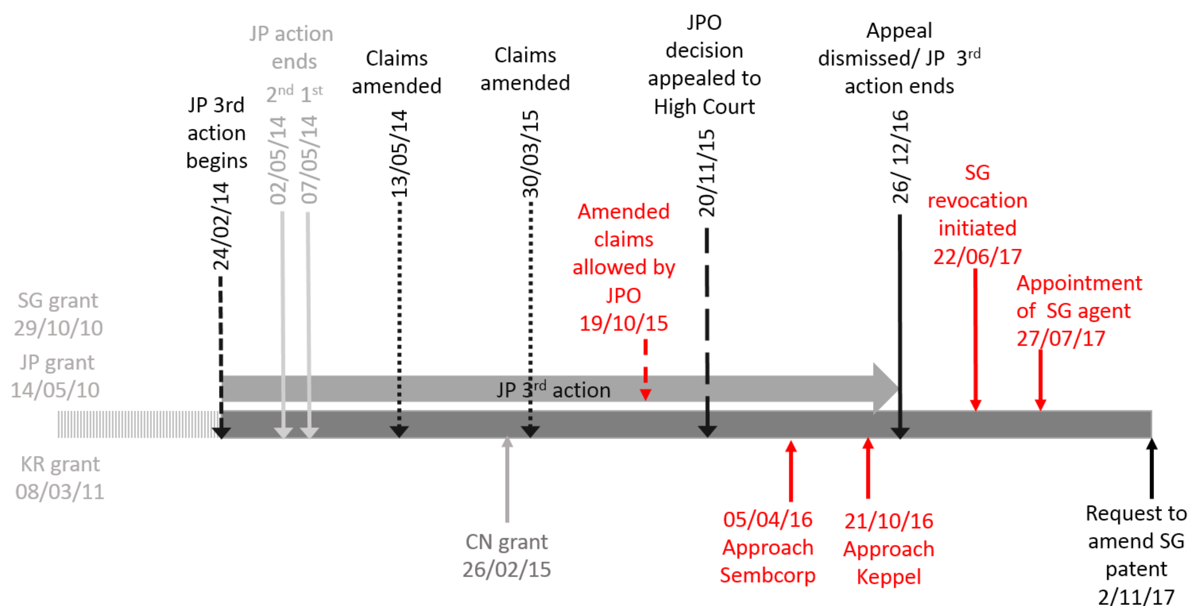
55 I should comment briefly on the grant of the patent in China, as the Opponents have argued that this provides further evidence that the Applicants would have known that the claims of the 788 Patent were not valid. Whilst I agree that this is further evidence that the Applicants should have been aware of the need to amend the 788 Patent, the Applicants were in the process of defending their patent in the third invalidation trial in Japan. It would therefore be reasonable to expect the Applicants to await the outcome of this trial before deciding how to amend the 788 Patent.

Whether There Was Undue Delay Between Conclusion of Third Invalidation Trial in Japan and Request to Amend in Singapore

56 I agree with the Opponents that the grant of corresponding patents with narrower claims in Korea and China, and the narrowing of the claims of the JP Patent following the first and second invalidation trials would have alerted the Applicants to the probable need to amend the Singapore patent. However, I disagree that any amendments should necessarily have taken place before the conclusion of the third invalidation action in Japan. As such, and taking guidance from ***Novartis v Ranbaxy***, as well as ***Matbro***, I consider that *prima facie* there was not *necessarily* an undue delay on the Applicant's part in waiting until after the conclusion of the third Japanese invalidation before considering amending the 788 Patent.

57 This leaves me to decide whether there was an undue delay between the conclusion of the third invalidation action in Japan (26 December 2016) and the request to amend the 788 Patent in Singapore (2 November 2017). The time elapsed between these two milestones is less than 11 months. However, during this time, the Applicants knew that amendments to the 788 Patent were likely to be needed, with this need for amendment being first drawn to their attention nearly seven years prior. Therefore, I will consider whether the Applicants have provided a reasonable explanation for this particular delay of more than 10 months.

58 For ease of reference, a timeline of the significant events between the beginning of the third invalidation action in Japan, and the request to amend in Singapore is set out below:



59 The Applicants acknowledge that there was a delay in submitting their request to amend, but contend that they had valid reasons for doing so. In this regard, they referred to ***Warner-Lambert Co LLC v Novartis (Singapore) Pte Ltd*** [2016] 4 SLR 252 ("***Warner-Lambert HC***"). Specifically, the Applicants argue that, following the final judgment from the Japanese High Court, they commenced the process of sifting through the patents associated with the Japanese patent, with a view to ascertaining their status and how they related to that patent. This involved working across five countries and four languages, and there was no conclusion drawn at that time on how to specifically treat the 788 Patent. In particular, in the opinion of the Applicants, there was no reason to prioritise the Singapore patent over any of the others.

60 The Opponents, on the other hand point out that there were only five patents for the Applicants to assess, which is not an excessive number. Furthermore, there should have been no need to investigate how the claims of the 788 Patent related to the amended JP claims, because the 788 Patent was granted relying on the JP granted claims, and as such it would be apparent that appropriate amendments would be the same as those made in Japan.

61 I agree with the Opponents that five patents are not a huge number to deal with, although I acknowledge that there would be different instructions required for patent agents working in different jurisdictions and different languages. Nevertheless, I agree that the amendments required to the patent in Singapore need not necessarily be the same as those made during the third invalidation proceedings in Japan, and that the Applicants would be expected to consult patent agents familiar with Singapore patent law and practice before reaching a conclusion on the required amendments. The Applicants submit that once the period for appeal lapsed in Japan, they contacted their then patent agent, Allen and Gledhill LLP, on 17 January 2017 to discuss the results of the litigation in Japan. However, due to a conflict of interest, the Applicants deemed this firm to be unsuitable to represent their interests and therefore began a search for a replacement agent in Singapore. This led to a protracted search for the new agents, outlined by Mr Mihara in YM-1 at [11]-[13] and [17]-[18]. Agents for the granted patent and agents for the revocation were eventually contracted on 26 July 2017 and 27 July 2017 respectively, after revocation proceedings were initiated. In view of this revocation action by the Applicants for Revocation, Mr Mihara pointed out

that this left little time for consultation with the new agents, and therefore he made the decision to submit the same amendments as accepted at the end of the third Japanese invalidation trial in view of the time constraints at that time: [20] of YM-1.

62 In their submissions, the Opponents argue that that the problems surrounding appointment of new agents are not sufficient to justify the delay in the Applicants' application to amend. They point out that the Applicants and their related companies hold a number of patents in Singapore, and have agents on record other than Allen & Gledhill LLP. Therefore, the Opponents claim that the Applicants have not satisfactorily explained why one of these existing agents for their other patents could not have been approached (in a shorter time than what came to pass). In particular, there were already agents on record for the Applicants' remaining patents in relation to BWMS, and the Opponents submit that these agents would have been the obvious choice to deal with the patent. The Opponents also argue that in ***Instance v CCL Label Inc.*** [2002] FSR 27 ("***Instance***"), the UK Patents Court found that a delay of one year amounted to an undue delay, as a period of two months would be sufficient to formulate an amendment. In their written submissions, the Opponents consider that provided the Applicants had sought advice in a timely manner, three months from the Japan High Court's decision, at most, would be more than enough time for the agents in each country to formulate amendments in their jurisdiction.

63 I cannot comment on the reasons for the Applicants not approaching the agents already on record for their other patents, especially those relating to BWMS, to replace Allen & Gledhill LLP in the revocation proceedings in Singapore, as no explanation for this was given. However, it is plausible that there may be business reasons why any of these other agents was not approached, and I am not in a position to draw specific conclusions here[3]. Despite this, I agree with the Opponents that there does appear to be a delay in appointing an agent to replace Allen & Gledhill LLP, and this delay in appointing a new agent appears to be a further consequence of the Applicants not prioritising the 788 Patent.

64 As for the Opponents' reference to ***Instance***, I note that Pumfrey J commented, at [33]: "*My view is that* ***after counsel's advice*** *was received a period of two months would have been more than adequate to formulate an amendment*" (emphasis mine). It has already been established that the Applicants did not appoint new patent agents until 26 and 27 July 2017, one month after the revocation action had been initiated, and that the request to amend was made on 2 November of the same year. This is a period of three months and five to six days between engaging the new agents (one each for the granted patent in general, and for the revocation action specifically) and amending the patent, which in itself I do not think is excessive (and indeed is not far off what the Opponents claim to be an acceptable timeframe, see [62] above). Therefore, I do not find that this specific reference helps to progress the Opponents' arguments.

65 Nonetheless, I am mindful of the underlying principles why Section 83(1) of the Act allows the exercise of discretion when considering amendments to a patent. An analysis of this is provided quite nicely in ***Smith Kline & French Laboratories Limited v Evans Medical Limited*** [1989] 1 FSR 561 ("***Smith Kline & French***"), where (at p567) Aldous J (as he

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[3] YM-1 at [13] states "From 1st April 2017, we began the procedure of transferring patents to the newly in charge department. As this handover period was set to take a number of months, I and my department members continued the process of evaluating new agents. The fact that none of the companies my department previously shortlisted could represent on behalf of this patent became clear after completion of this investigation and due diligence work of my department…"

then was) referred to the judgment in ***Bristol Myers Company v Manon Frères Limited*** [1973] RPC 836, and considered that there, Whitford J "*was indicating that it is in the public interest that patentees should not delay in seeking to amend and that amendment will not be permitted in cases where a patentee knows or ought to know that amendment should be sought and fails to do so for any substantial period of time*". Aldous J further points out (at p568) that the judge in ***Matbro*** "*drew attention to the fact that there is a detriment to the general public by the maintenance in an unamended form of a patent which should be amended for a substantial period of time*". The protection of public interest has also been pointed out in ***Ship's Equipment***, as discussed in [23] above.

66 What appears to be key here is the level of knowledge the Applicants had, of the need to amend, because it is in the interest of the public to do so promptly. In this regard, I turn to the decision of the Court of Appeal in ***Warner-Lambert CA***, and specifically to its reference to the judgment of the Federal Court of Australia in ***CSL Limited v Novo Nordisk Pharmaceuticals Pty Ltd (No 2)*** [2010] FCA 1251 ("***CSL Ltd***"). In particular, Tay JA (in delivering the judgment of the court) made reference, at [47], to the rejection of the explanation of the patentee that they had delayed amending the patent as they had never received any advice from their attorneys that once an amendment was made in any particular jurisdiction, there was benefit in reviewing the entire patent portfolio with the amendment in mind. In ***CSL Ltd***, the judge considered that the patentee had been put squarely on notice that there was an issue with the claim, and even without the advice of an attorney, the examiner's opinions at the very least imposed some obligation upon the patentee to obtain advice in relation to the patent in question. In agreeing with the judge's view in ***CSL Ltd***, Tay JA considered, at [48], that "*In our judgment, ensuring the timeliness of patent amendments upholds the public interest in 'preventing unworthy inventions and products from monopolising the market'* (Martek Biosciences Corp v Cargill International Trading Pte Ltd *[2011] 1 SLR 1287 at [37]). Such an approach would also 'take into account the public interest which is injured when invalid claims are persisted in so that inventors are legitimately warned off the area of the art ostensibly monopolised by the claims': see* Raleigh Cycle Co Ltd v H Miller & Co *[1951] AC 278 at 281*".

67 Tay JA went on, at [59] of ***Warner-Lambert CA***, to refer to the policy objectives surrounding Section 83(1) and agreed with the defendants, Novartis, that "*if a patentee is put on notice only when it receives clear advice that the patent is problematic, patentees would be free to delay amending their patents by simply not taking advice*". He went on to reject Warner-Lambert's explanation for the failure to amend due to a lack of suitable legal advice, and considered that the various incidents leading up to that appeal should have placed them on notice of the potential invalidity of the patent. Furthermore, Tay JA made clear at [58] that "*it was incumbent on Warner-Lambert to be responsible for the validity of the Patent in the register. The monopoly rights that Warner-Lambert enjoyed as a result of the grant of the Patent dictated that it should not stand idle and wait for challenges to validity or for infringement before it reviewed the validity of the Patent.*"

68 Taking into account the above decisions, as well as the public interest angle here in relation to the requirement of a prompt amendment, I think it is worth looking in more detail at what the knowledge of the Applicants would have been during the period of time between the initiation of the third invalidation trial in Japan, and the request to amend the 788 Patent, and how they acted upon this knowledge. The third invalidation trial began shortly before the conclusion of the first and second actions before the JPO, but after amendments had been made to the granted claims, indicating that the Applicants had conceded that the

claims as granted were invalid. The claims under scrutiny for this third action were those essentially allowed by the JPO in March / April 2012, with the exception of claim 6, which was allowed by the Japanese IP High Court in September 2013. This means that, upon entering the third invalidation trial, the claims of the JP Patent were already narrower than the claims of the 788 Patent. Nevertheless, as opined at [54] above, piecemeal amendment of the patent is not desirable and therefore on the face of it, I can understand why the Applicants did not amend the 788 Patent at this point in time.

69 However, the third invalidation trial resulted in two rounds of amendments to the claims, with the final amendments made on 30 March 2015, and accepted by the JPO with their decision of 19 October 2015. This means that on 19 October 2015, the JP Patent had been maintained in a significantly amended form, following a validity challenge. This decision was appealed to the Japanese IP High Court by the plaintiffs, and not the Applicants. Given that the Applicants had appealed the previous two decisions of the JPO, yet had decided not to appeal this present decision, this suggests to me that they had already accepted that the patent could only be maintained with this narrower set of claims. This means that, again, the Applicants had conceded that the broader claims originally granted by the JPO were invalid. While further amendments may have been necessary following appeal to the High Court, this does not detract from the Applicants' knowledge that the claims originally granted by the JPO were not valid.

70 At this point, I refer to the Applicants' counter-statement in the revocation proceedings, at [3(C)] of Annex B to the counter-statement (pp 51-52). There, the Applicants state that they began sifting through the claims of the corresponding patents after the conclusion of the third invalidation trial, in order to ascertain the status of the claims of each patent and how they related back to the claim language of the Japanese patent to determine what amendments may be needed. They also contended that they saw no reason at that point to prioritise amendment of the 788 Patent, as it was not foreseen by the Applicants that revocation proceedings against that Singapore patent would commence in six months. This description of what the Applicants did also suggests that they were not aware of the status of the 788 Patent at the time that the third invalidation trial concluded.

71 I cannot accept the Applicants' arguments that there was no obvious reason to prioritise the 788 Patent over the others. First, the patents that had been granted in Korea and China were already narrower in scope, with amendments akin to those made to the JP Patent during the first and second invalidation proceedings, and the Indian application was still pending. The 788 Patent, however, remained in its unamended state. At the very least the Applicants should have first turned their attention to addressing the claims of the Singapore patent, as this was clearly the one with the broadest monopoly.

72 Second, and very significantly, it is clear from their written submissions that one of the Applicants, Hitachi, had indeed already begun to consider selling or licensing the 788 Patent, even prior to the conclusion of the third invalidation trial in Japan. By their own admission at [16]-[17] of their written submissions, the Applicants state that they began to consider what to do with the family of patents once the Japanese invalidation case was concluded, at around the time the latter was coming to a close. While they did not particularise when they began to look at the other family members, the Applicants go on to state that an option considered was to build a business case for the monetisation of the 788 Patent, at which point Hitachi engaged Frost & Sullivan, a market research consulting company.

73 The emails exhibited in the statutory declarations of Mr Kuik Sow Hong (KSH-1)[4] and Mr Goh Chee Hian (GCH-1)[5] (for the Opponents) and YM-1 (for the Applicants)[6] show that Frost & Sullivan made initial contact with Sembcorp Marine Ltd ("Sembcorp") on 5 April 2016 ([4] of KSH-1), and Keppel Shipyard Ltd ("Keppel") on 21 October 2016 ([4] of GCH-1). This shows that, at the very least, Hitachi had begun to consider the exploitation of the 788 Patent eight months prior to the conclusion of the third invalidation proceedings in Japan (on 26 December 2016). Hitachi went on to meet Keppel several times between 3 November 2016 and 7 December 2016, again prior to the conclusion of the third invalidation trial in Japan, and then with Sembcorp on 20 January 2017, shortly after the conclusion of the invalidation trial.

74 At this point, contradictions in the Applicants' submissions regarding their actions during and after the third invalidation trial in Japan become evident. On the one hand, they argue that they wanted to give their fullest attention to any amendments necessary to the corresponding patents as a result of those made in Japan, which would also ensure that any amendments made in Singapore were appropriate to address the laws and practices here. This suggests that the Applicants were aware that amendment was needed, and they also wanted to ensure that the amendments would be sufficient to overcome any possible validity challenge. On the other hand, Hitachi pushed forward with attempts to monetise the 788 Patent in its unamended state. This is a patent that Hitachi were aware had been deemed invalid over three trials in Japan (as well as from the examination process in Korea and China). Yet, they made no attempt to amend the patent in Singapore prior to meeting Keppel and Sembcorp.

75 KSH-1 and GCH-1 seem to indicate, at [14] and [8] respectively, that Hitachi admitted during their meetings with Keppel and Sembcorp that there were or had been invalidation proceedings in relation to the Japanese patent. However, from both YM-1 and from the emails sent by Frost & Sullivan exhibited under KSH-1, GCH-1 and YM-1, Hitachi did not appear to directly admit that amendments were needed to the claims of the 788 Patent. I note the statutory declaration of Mr Mihara in YM-1, where he appeared to indicate, at the meeting with Keppel, that the claims of the 788 Patent were contingent upon the result of the invalidation trial, and that without the signing of a non-disclosure agreement (NDA), Hitachi may have been reluctant to discuss this any further ([25]-[26]). Nevertheless, these words are not a clear admission that the claims of the 788 Patent would need amendment. Furthermore, in his statutory declaration (KT-1), Mr Kiyokazu Takemura stated that he believed that enough information was given to discern that the likelihood of amendment was high, with Mr Mihara informing him that large companies with legal counsel, such as Keppel and Sembcorp, will have performed their own due diligence when informed of the existence of intellectual property that may be of interest to them ([14] and [15] of KT-1). Again, this is not a clear indication that Hitachi informed Keppel and Sembcorp that amendments may actually be needed to the 788 Patent.

76 It may be that Mr Goh or Mr Kuik did not appreciate the subtleties of Mr Mihara's comments regarding the claims of the 788 Patent, which may or may not have suggested

[4] See Exhibit SK-1 of KSH-1.
[5] See last page of Exhibit GCH-1 of GCH-1 which shows the email of one Daniel Wicaksana of Frost & Sullivan to Louis Chow of Keppel Shipyard Ltd.
[6] See page 4 of Annex 4 (Exhibit) of YM-1 which shows an email from Frost & Sullivan to Louis Chow of Keppel Shipyard Ltd.

that amendment would be needed. However, from their statutory declarations, it is clear that whilst they understood that the JP Patent had been challenged, they were not aware that there would be any impact of this upon the 788 Patent. In particular, Mr Kuik was under the impression that the 'success' of the proceedings in Japan would mean that the 788 Patent would stand up to challenge in Singapore.

77 From the evidence of both parties before me, it does appear that Hitachi did not directly state that amendments to the 788 Patent would be likely in light of the proceedings in Japan. Even if it was not necessary to introduce all of the amendments made to the JP Patent to the 788 Patent, the Applicants would have been fully aware that some amendment would be needed, not only because of the three invalidation proceedings in Japan, but also because of the examination process in Korea and China. In their written submissions at [20], the Applicants appear to acknowledge that they did not disclose to either company that amendments were being contemplated because such details could only be shared under the protection of an NDA. However, whilst I appreciate that the Applicants may not have wanted to discuss the specifics of any amendments without the signing of an NDA by Keppel and Sembcorp, I consider that, at the very least, Hitachi should have pointed out that some amendment to the claims of the 788 Patent was likely to be necessary. Instead, it appears that Hitachi continued to base their discussions around the unamended claims, producing a brochure to this effect, as exhibited under KSH-1.

78 Furthermore, when asked about the invalidation proceedings in Japan, Hitachi appeared to be consistent with their response that the proceedings had or would conclude in their favour. This is evident from YM-1[7], KT-1[8], TPB-1[9], YM-2[10] and GCH-1[11]. In the latter, the first exhibit disclosed an email from Frost & Sullivan to Keppel's Mr Goh on 5 January 2017, informing him that the final ruling was in favour of the Applicants, making it "3 consecutive win (*sic*) for Hitachi without loss"[12]. This choice of wording "3 consecutive win (*sic*) … without loss" is, in my opinion, misleading. Yes, the patent was upheld, which could be seen as a win in terms of the Applicants retaining a monopoly, but it had been upheld in an amended form, after the granted claims were deemed to be invalid, resulting in a much narrower monopoly than that which Hitachi presented to Keppel and Sembcorp. This is not what a reasonable person apprised of the full facts would consider to be "a win without loss".

79 I refer to ***Warner-Lambert CA***, where the Court of Appeal found, at [55]-[57], that it was incumbent on Warner-Lambert to amend the patent at the earliest opportunity, or at least to seek legal advice in relation to the issue, and rejected the explanation that there was no challenge to the validity or threats of infringement that would give rise to the need to seek legal advice. The court considered that the incidents leading up to the appeal ought to have put Warner-Lambert on notice of the potential invalidity of the patent. I think the same can be said here of the Applicants. It is clear from the events in Japan, at least, that the 788 Patent as it stood was likely to be invalid. The Court of Appeal went on to opine at [58] that "*The monopoly rights that Warner-Lambert enjoyed as a result of the grant of the patent dictated that it should not stand idle and wait for challenges to validity or for*

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[7] [25] of YM-1.
[8] [17] of KT-1.
[9] [18] of TPB-1.
[10] [16] of YM-2.
[11] [8] and especially [16] of GCH-1.
[12] See the first page of Exhibit GCH-1 of GCH-1 (the exhibits are not paginated).

infringement before it reviewed the validity of the Patent". Looking at the present situation, it does appear to me that the Applicants were not rushing to amend the 788 Patent, and, moreover, were actively trying to commercialise it. The failure (or inability, as the Applicants see it at [16] of YM-1) to obtain advice from an agent with regard to the validity does not excuse this delay. Hitachi were clearly aware of the need to amend, yet continued to push for meetings with Sembcorp and Keppel with a view to ultimately sell or license the 788 Patent, and, in the case of Sembcorp, even after the conclusion of the invalidity trials in Japan. This behaviour is also on all fours with the comments of Graham J in ***Matbro***, where, at p834, he considered that "*…delay is culpable because potential defendants and the general public are entitled to plan their activities on the assumption that the patentee, though warned, has decided not to amend. If the patentee, by his conduct, lulls the public into a false sense of security he cannot thereafter be allowed to change his mind and ask for amendment, or at any rate without adequate protection being granted to the public*."

80 In addition, as described above, the 788 Patent was granted under the 'self-assessment' system. The Court of Appeal in ***Warner-Lambert CA*** had this to say about proprietors of patents obtained under such a system, at [49]:

> Further, under the self-assessment system, Warner-Lambert was under an obligation to make a considered decision before proceeding to obtain a grant of the Patent. The fact that the system was a self-assessment system at the time of grant should not give patentees the liberty of taking a lackadaisical approach in ensuring that their patent claims in the register comply with the requirements of patentability under the Patents Act. This is especially so as the grant of the Patent allowed Warner-Lambert to enjoy a monopoly in the supply and sale of pregabalin in Singapore despite the clear invalidity of the Granted Claims. Adopting a lenient approach as advocated by Warner-Lambert "would only encourage dilatory conduct and wilful blindness on the part of patentees, and cause invalid patents to remain on the register for longer than necessary".

81 The suggestion that it was 'only' a period of almost 11 months (and not longer) between conclusion of the proceedings in Japan and the application to amend the 788 Patent is also no excuse. As pointed out by Pumfrey J in ***Instance***, at [40], "*The period of delay in this case is comparatively short. The explanation for it is not satisfactory – I can see no reason to pursue the limitation in Germany but take no steps in pending proceedings in this country. There was no explanation for the failure to notify the defendants in the various sets of proceedings concerning the EP(UK) that claim 8 was invalid and that amendment would be sought. Proceedings were started asserting this claim although it was thought to require amendment*." Even though this was said in relation to infringement proceedings, the same consideration applies to any attempt to hold out an invalid patent to the disadvantage of third parties. The discretion to refuse amendments to patents is to ensure that patentees do not act unreasonably even when no advantage has been gained (see ***Instance*** at [37]).

82 Therefore, even though I agree with the Applicants that amendment would not have been particularly useful whilst the invalidation trials were still ongoing in Japan, there is no excuse for the failure to amend the 788 Patent promptly after the conclusion of these trials. It is clear from Hitachi's behaviour in discussing the sale or licence of the 788 Patent with Keppel and Sembcorp, that the former were aware of the monopoly rights that were given by the patent grant, and as the evidence shows, they were also aware of the restrictions to

those rights following the proceedings in Japan. However, they continued to attempt negotiations based upon the unamended patent, and did not attempt to make any amendments until after the validity of the 788 Patent was challenged. Hitachi was able to expend time and effort in pursuing commercial leads based on the unamended patent, but, at the same time, could not (or rather, did not) channel resources to amend the 788 without undue delay after the close of the third invalidation proceedings in Japan.

83 I find that there was an undue delay on the part of the Applicants in applying to amend the 788 Patent. This factor has me minded to refuse the Proposed Amendments. Nevertheless, I will continue to consider all the facts of the case before drawing a final conclusion. The foregoing sees an overlap in the facts pertaining to "undue delay" and to "unfair advantage"; the notion of advantage (to patent proprietors) / disadvantage (to third parties) has been introduced, and it is to the discretionary factor of "unfair advantage" that I now turn.

Unfair Advantage

Parties' Submissions

84 The Opponents submit, essentially, that the Applicants sought to obtain an unfair advantage from the 788 Patent by offering to sell or license the unamended patent to both Sembcorp and Keppel, knowing that the scope of the patent was wider than what the Applicants are entitled to. According to the Opponents, this 'advantage' that they were seeking to gain was the opportunity to sell or license the patent, and the opportunity to close the deal at a higher price or subject to terms that were more favourable to the Applicants than would otherwise have been the case if the patent were amended.

85 The Applicants, on the other hand, submit that no unfair advantage was gained because:

(i) It was never suggested that Keppel, Sembcorp or any other Singaporean entity were infringing the 788 Patent;
(ii) No threat of proceedings for infringement of the 788 Patent was ever made against Keppel, Sembcorp or any other Singaporean entity;
(iii) No infringement proceedings have ever been brought by the Applicants against any party in Singapore in relation to the 788 Patent; and
(iv) No offer capable of acceptance to sell or license the 788 Patent was ever made by the Applicants to Keppel, Sembcorp or any other Singaporean entity.

Analysis

86 As I have discussed in detail above under the heading "Undue Delay", it is clear that Hitachi had made arrangements to meet with both Keppel and Sembcorp in order to discuss the benefits of the 788 Patent. The consulting firm, Frost & Sullivan, contacted both companies with a view to ascertaining the interest of Singapore shipyards in two patents relating to BWMS which would offer cost saving benefits for BWMS retrofits and new builds. The contact email specifically stated that Hitachi requested a meeting to discuss the possibility of licensing the patents with both Keppel and Sembcorp. It is clear, therefore, that Hitachi at least had the *intention* of monetizing, and gaining an advantage from, the 788 Patent. However, whilst it is clear that Hitachi had the intention of seeking to gain an advantage

from a patent that they knew to be invalid, does the intention alone amount to an unfair advantage?

87 When discussing what amounts to an unfair advantage, the majority of the jurisprudence brought to my attention agrees, quite simply, that commencing infringement proceedings in relation to a patent that the owner knows to be invalid is an instance of taking unfair advantage. Clearly, that is not the case here. As the Applicants have pointed out, there have been no threats of infringement against any Singaporean entity. However, there is also nothing in the jurisprudence that would suggest that infringement proceedings are the only action that would be considered to be an unfair advantage. Indeed, the High Court observed, at [117] in ***Warner-Lambert HC***, that an *example* of an unfair advantage given in ***Smith Kline & French*** is where a patentee threatens an infringer with his unamended patent after he knew of the need to amend. This example is by no means exhaustive.

88 The Opponents further refer to ***Ship's Equipment*** at [133] and ***Oxford Gene Technology*** at [18], and point out that the rationale of the court's discretion to refuse amendment is to ensure that patentees do not gain an unfair advantage from the monopoly of a patent due to their failure to amend. They also refer to ***Zipher Ltd v Markem Systems Ltd*** [2007] EWHC 154 (Pat) ("***Zipher v Markem***") as an example of the kind of conduct which amounts to seeking an unfair advantage. Specifically, Lewison J, at [20], considered that what was intended to be an unfair advantage does not *"amount to any form of rigid rule. Moreover, what the learned judge plainly has in mind is a case where an actual threat has been made in reliance upon the unamended claims... Something, broadly speaking, along those lines was the position of Mr. Arnold's erstwhile clients in* Petrolite Holdings v. Dyno Oil Field Chemicals UK Limited *[1998] FSR 190 but there is this difference between that case and this: that in the* Petrolite *case it appears from the recitation of the facts by Laddie J that Petrolite had been drawing attention to the unamended patent to customers of the trade rival without any indication that the claims embodied in that patent were not contended to be valid. That is the sort of unfair advantage which, in my judgment, Aldous J had in mind.*"

89 The Opponents submit that ***Petrolite Holdings Inc v Dyno Oil Fields Chemicals UK Ltd*** [1998] FSR 190 ("***Petrolite***") is significant because the patentees sought to advance their position in the marketplace by suggesting to customers of the alleged infringer that the patentees were entitled to the broad scope of monopoly conferred by the unamended patent. This demonstrates that the unfair advantage is not merely intended to relate to the situation where the patentee had threatened or sued an alleged infringer based on its unamended patent. The Opponents argue that this extends to a case where the patentee sought to gain a commercial advantage by notifying a competitor's customers of the existence of the unamended patent.

90 In ***Petrolite***, it appears that the patentee in fact notified the competitor's customers of the patent after they had commenced infringement proceedings against the defendant, i.e. they were at least warning those customers that there was the possibility of infringement – this would appear to be what Lewison J meant by the reference to ***Petrolite*** in ***Zipher v Markem*** at [20]. However, in the present case, no such threat had been made by the Applicants. Therefore, the present case is distinguishable from these cases as, again, the latter still relate to a threat of infringement. Consequently, the question – whether entering into discussions with Keppel and Sembcorp, with a potential view to sell or license the patent, amounts to the Applicants seeking an unfair advantage – remains to be answered.

91 The Applicants contend that they never intended to gain an unfair advantage. They argue that without the signing of an NDA, it would not have been possible to share enough information in order to ascertain the marketability and the potential business case of the 788 Patent. They also point out that it would be naïve to share sensitive details without any attempt to protect any amendments from public disclosure. Sembcorp, however, were under the impression that the patents were in their final, unamended form and Mr Kuik, in KSH-2 (at [21]), had the understanding that the purpose of the NDA was to discuss know-how relating to the solutions described in the 788 Patent; and pricing. They also thought that the proceedings in Japan "without loss" (see [78] above) meant that the 788 Patent would equally stand up to such scrutiny.

92 On the one hand, the Applicants had indeed not gained an advantage in the traditional sense by *threatening* any third parties using the monopoly of the 788 Patent in its unamended form. However, on the other hand, I appreciate the Opponents' point that Hitachi did appear to be trying to commercialise the 788 Patent, based on its unamended, and likely invalid, form. In this regard, I refer to the comments of Lee J in ***Ship's Equipment*** at [133], where he considered that the inquiry in relation to an unfair advantage concerns, at least in part, the conduct of the patentee and not the merits of the patent. He referred to ***Instance***, where, at [37], Pumfrey J considered that "*Underlying the principles affecting the exercise of this discretion is a desire to ensure that patentees do not obtain an advantage which is unfair from their failure to amend, and perhaps, in some cases at least, to punish patentees for the unreasonableness of their conduct even when no advantage has in fact been gained.*"

93 In the present case, looking at the evidence before me as a whole, I find that the unreasonable delay in applying for an amendment was compounded by the behaviour of Hitachi in their discussions with Keppel and Sembcorp. Even if those discussions were not complete in the sense that they did not enter into any licensing or sale agreement, it appears that this was not for want of trying. Even if the lack of an NDA prevented Hitachi from disclosing the specific necessary amendments to Keppel and Sembcorp, they should have at the very least mentioned that amendments to the 788 Patent were likely to be necessary following the conclusion of the proceedings in Japan. Instead, their discussions were based upon the unamended 788 Patent, with the provision of a brochure depicting the unamended claims, whilst pointing out that the proceedings in Japan all concluded in their favour. The email from Frost & Sullivan to Keppel on 5 January 2017, claiming that the final ruling was in favour of the Applicants, making it "3 consecutive win (*sic*) for Hitachi without loss" was misleading in the entire context. Hitachi were not upfront in informing Keppel and Sembcorp that the 788 Patent was likely invalid as it stood (in its unamended form), and pressed on with discussions to gauge interest in sale or licence of the patent. Using the words of Lee J in ***Ship's Equipment*** (at [155]), these actions could be considered as "*covetous conduct*".

94 Therefore, I find that the Applicants have not acted reasonably in their dealings with Keppel and Sembcorp. This is the case even though they had not gained an advantage in the traditional context of threats of infringement. In keeping with the policy objectives and spirit of the rationale for the discretion to refuse an application to amend (expressed by Pumfrey J in ***Instance*** at [92] above), I find that the conduct of the Applicants is another reason (in addition to the earlier reason of undue delay) why the Proposed Amendments should not be allowed.

Conclusion

95 Having considered all the pleadings and evidence filed, and the submissions made in writing and orally, I find that the circumstances of the present case are sufficient to justify my refusal to allow the Proposed Amendments. As such, the opposition to amendment succeeds.

96 The Opponents are entitled to costs, to be taxed if not agreed.

Date of Issue: 20 March 2019