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No NSD 1484 of 2025

On appeal from the Federal Court of Australia

Dyno Nobel Asia Pacific Pty Ltd ACN 003 269 010

Appellant/Cross-Respondent

Orica Explosives Technology Pty Ltd ACN 075 659 353 and others

Respondents/Cross-Appellant

DYNO NOBEL'S OUTLINE OF SUBMISSIONS IN REPLY

(16 March 2026)

[redacted]

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A. 079 AND 165 PATENTS

1. ***Introduction***. The criticisms of DNAP's best method pleading in Orica's submissions in answer (**OSA**) [1]-[2], [20], [27], [37]-[39] are, with respect, unjustified. DNAP's Sixth Further Amended Statement of Claim (Pt A Tab 10) at [171][1] sets out clearly the best method case DNAP brought forward below and brings forward on appeal: ie, a working embodiment of the inventions known to Orica which included a functioning VM means was not disclosed in the 079 and 165 Patents. That paragraph particularises Mr Boucher's Confidential Annexure CJB-27 which provides further detail by reference to Orica's own documents. Orica joined issue with that pleading (Pt A Tab 11) and filed evidence in answer directed to those documents. DNAP's opening submissions expanded on the pleaded allegation as underpinning both the "*no working embodiment case*" and the "*Orica embodiment case*". This was more than enough to put Orica on notice of the best method case that was advanced by DNAP below.

2. In any event, several matters are not in dispute. *First*, it is common ground that the invention in each of the 079 and 165 Patents includes a VM means. This is clear from Orica's embrace of the primary judge's construction of "*charge storge device*" as something that performs a VM function (or "*contains*" the VM means: OSA [25]), and the description and claims in each patent which disclose the need for a VM function to enable actuation of the base charge. *Secondly*, it is not in dispute that no working embodiment of a VM means is disclosed in either patent. Orica has not suggested otherwise, or pointed to any such disclosure, or contradicted DNAP's submission that the only examples of "*charge storage devices*" given in each specification (ie, a capacitor, diode, rechargeable battery or activatable battery) are individually unable to perform a VM function. *Thirdly*, it is clear that Orica had knowledge of a working embodiment of the invention at the filing date of each patent that included a functioning VM means. Again, Orica has not contradicted DNAP's submission to this effect, and the primary judge's findings confirm that it was so. So do Orica's documents. There is no doubt that DNAP pleaded and opened on the case that Orica had knowledge of a such working embodiment that it did not disclose in either patent: PJ [574(2)].

3. These undisputed matters provide a powerful indication that Orica has failed to disclose the best method known to it of performing the invention as required by s 40(2)(a).

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[1] Which was present in the previous iteration of DNAP's pleading in place before the hearing below (and which version was referenced in Orica's Second Further Amended Defence).

4. Orica's response is essentially twofold: aside from criticising DNAP's pleading, it relies on the primary judge's findings that the patents are concerned with the "*architecture*" of the claimed features and not specific VM means: OSA [7], [10], [17], [18], [26]; and her Honour's findings to the effect that a VM means is a simple electronic circuit that could be implemented using CGK or as a matter of routine: OSA [4], [6], [7], [9], [10], [31]-[32]. Neither point provides an answer to DNAP's best method case.

5. ***"Architecture" of claimed features***. The requirement of s 40(2)(a) to disclose the best method known to the patent applicant of performing the invention cannot be avoided by characterising the invention as being concerned only with the "*architecture*" of the claimed features – ie, with the claimed combination at a higher level of abstraction than an actual working embodiment. An invention is not an abstract concept. It is either a product or a process: Act, Schedule 1, definition of "*exploit*". In claim 1 of each of the 079 and 165 Patents, the invention is a product. Accordingly, these claims will be infringed by the exploitation of such a product, being a *working embodiment* of the invention including components that fall within the scope of the claimed features. The claims are not infringed by "*architecture*" absent such an embodiment.

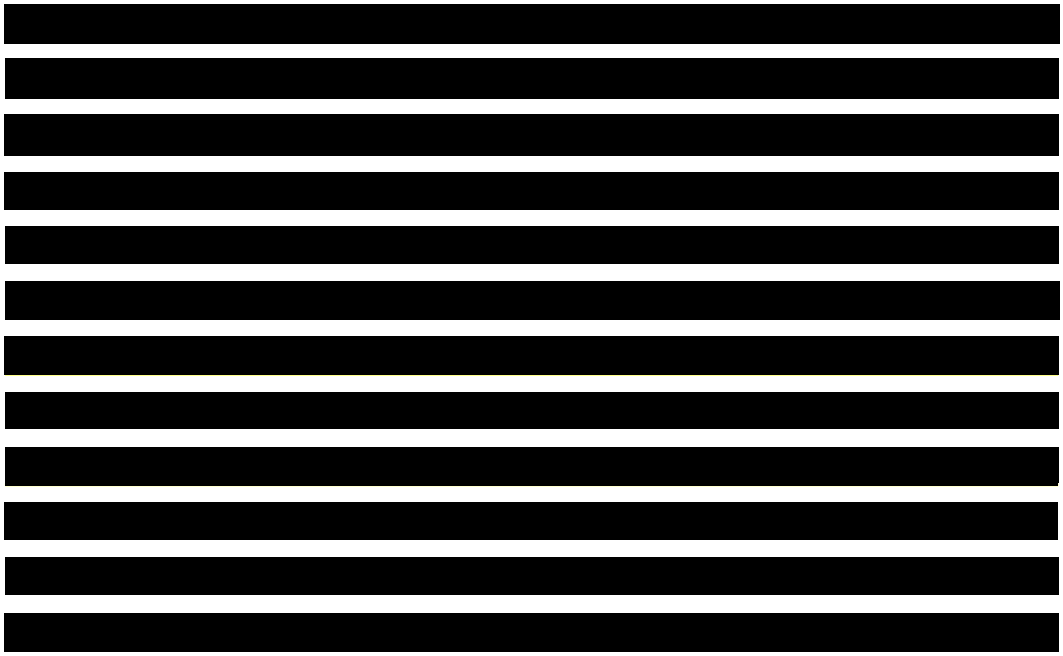
6. Further, s 40(2)(a) requires a disclosure of the best method known to the patent applicant of *performing* the invention. An invention is not capable of being "*performed*" without a working embodiment. Even if an invention might be described for the purposes of *sufficiency* at a higher level of abstraction (if this is enough to enable a skilled person to perform the invention without undue burden), the *best method* requirement demands more: its purpose is to require the patent applicant to disclose the best working embodiment of the invention, which enables the invention to be performed, if the patent applicant has knowledge of such an embodiment at the filing date.

7. Moreover, the evidence does not support Orica's submission or the primary judge's findings that the invention is concerned only with the "*architecture*" of the claimed features. A close examination of the evidence relied on in the footnotes to OSA [7] indicates that the experts formed a more granular view of the invention: see, in particular, Boucher #1 [474], [178]; Napier #1 [288], [548]; Skafidas #1 [48].

8. In the present case, given the matters outlined above, any working embodiment of the invention in the 079 and 165 Patents necessarily included a specific VM means. Orica's submissions acknowledge this, in that they accept that the choice of specific VM means will depend in part on the choice of other components, and that some VM means will work for some combinations of components but not others: OSA [10]. This underscores

the fact that the VM means had to form part of any disclosure of the best method. For the same reasons, the choice of VM means is material to the advantages it is claimed each invention brings, in terms of the analysis in both *Zoetis* and *Servier*.

9. Consistently with this, the primary judge found that "*further information that might have been disclosed if the component choices in the Orica Documents had been described in the patents would be useful and save time if one wanted to build the Orica embodiment*": PJ [605]. The point of the best method requirement is to ensure that such information is disclosed. Orica does not challenge this finding, which reflects the evidence. As Mr Boucher cogently explained (Conf Ann CJB-27 at [872]-[873]; emphasis added):



10. In answer to OSA [12], ***SARB*** *Management Group Pty Ltd v Vehicle Monitoring Systems Pty Ltd* (2024) 176 IPR 391 can readily be distinguished. In *SARB*, the appellant failed to establish that the parameters in the patents did not reflect the best method of the wake-up scheme which was claimed or that different parameters were actually used (at [111]); or that there was any reason to think on the evidence that the inventor knew of a more sophisticated wake-up scheme (at [126]). That is, although the data sheet for the relevant transceiver referred to potential power savings, the evidence did not demonstrate that these had been realised; the power savings were never quantified in the evidence; and the evidence was that "*there are other considerations [when selecting a transceiver, besides power savings], such as 'cost, availability, lead times, etcetera*'" (at [134]). There was no finding by the primary judge that power savings were in fact achieved in the implementation, or likely implementation, of the transceiver (at [135]).

11. In short, SARB failed to prove its case. By contrast, in this case there is no question that Orica had used a specific charge storage device with particular advantages.

12. ***CGK or routine VM means***. Contrary to OSA [4], [6]-[7], the evidence did not support the conclusion that building a VM means as part of a working embodiment of the inventions was routine. In the joint expert report for the 079 and 165 Patents (**079/165 JER**) at [3e], the experts agreed that: "*There is not a lot that they would not know regarding these components/aspects*" but that "*Collectively, knowledge of bringing these pieces together was not known at the time*." Professor Boucher commented: "*The listed items are building blocks that at the time nobody had put together.*" Mr Papillon commented: "*It is not known how to bring the items together and create a safe device.*" Professor Skafidas commented: "*Even though each of the components are well known, there are important challenges and new knowledge is required to put these components together to build a solution, which was not known at the time.*"

13. Even if the *existence* of VM means was CGK, there were at least five known types of VM architecture, each of which operated by different means. Professor Skafidas' evidence was that "*the constituent components of a voltage multiplication device can be arranged in a number of different, well known architectures […] Different circuit architectures for achieving voltage multiplication are suitable for different purposes*": Skafidas #1 at [23]-[31]. In his oral evidence, Mr Boucher explained that depending on the VM means chosen, the VM means could involve components to control pulse wide modulation and the ability to control and regulate output or components to stabilise power supply: T352.46-353.19. Professor Skafidas and Mr Boucher further explained that the risk of instability would need to be controlled: T483.16-487.47.

14. In those circumstances, Orica's submissions at OSA [5]-[6] conflate the sufficiency requirement and the best method requirement. As each of *Servier* at [132]-[135] and *Zoetis* at [47]-[48] show, it is no answer to the best method case that the skilled addressee could make <u>*a*</u> wireless detonator assembly or wireless electronic booster that stored and multiplied charge, particularly in circumstances where some VM means will work for some combinations of components (such as the combination Orica knew and had decided to use in its commercial embodiment) but not others: OSA [10].

15. At OSA [22], Orica collapses two separate "*control*" arguments into one. PJ [572(3)] talks about there being no description of any means of controlling VM *at all* (which her Honour accepted was part of the opened case: PJ [569]). At PJ [586]-[587], her Honour found that the use of [redacted] was not pleaded.

16. In response to OSA [3], [25], DNAP's attack was outlined in its written opening submissions on validity, which stated at [23]: "*Neither specification exemplifies **any specific charge storage device nor discloses any additional component** that, when incorporated in an assembly or product together with a charge storage device, would be capable of multiplying or stepping up the voltage*" (emphasis added).

17. In response to OSA [3], Orica's 'answer' to the best method case is no answer at all. The specifications did not disclose how to make a charge storage device that could act as a VM means. The proper construction of "*charge storage device*" is irrelevant.

18. In answer to OSA [28], Professor Skafidas described the internal Orica document in question as being Orica's design team's approach to reducing the invention described in the patent to practice. As he explained: "*the person – the team that are actually building or reducing the patent [to] practice are going through … a design process where they're trying to put all the components together in order to convert what is described in the patent into … a real system. … So there's reduction of that idea or concept that's [described in] the patent into a physical implementation*" (T1081.5-19).

19. That is to say, it was the best method of performing the inventions known to Orica. However, it was not disclosed by Orica in either the 079 or 165 Patents.

B. 873 PATENT

20. ***Construction of "wireless initiation device"***. OSA heavily rely on the definition of "wireless" and fail to confront the definition of the claimed term, WID. A WID is defined to "***typically** include detonators*" (p 13.1). If it *must* include a detonator, the definition does not make sense. Likewise, multiple references in the specification would not make sense (see p 14.10-16 (detonator not in list of WID components) cf p 18.23-27 (detonator in list of components of a WID); p 16.4-15 "*wireless initiation devices or detonators*"; p 19.24-25 "*If the devices include detonators*"). Cf OSA [41], DNAP does not argue that her Honour erred because she disagreed with the experts. Her Honour erred because her construction, which was contrary to the experts', applied the definition of "*wireless*" to narrow the meaning of WID in a manner inconsistent with the specification.

21. OSA [42] says that its construction must be right because, if a WID does not include a detonator, then the detonator could be wired and "*wireless communication with detonators is at the heart of the 873 Patent*". That is misguided. *First*, the 873 Patent is about wireless communication with WIDs, not detonators. The title is "*Selective control of wireless initiation devices at a blast site*" and the invention is described as permitting selective control and initiation of wireless initiation devices (eg, p 30.3-4). A WID may

initiate blasting by having an integral detonator or by communicating with a detonator. Nothing in the 873 Patent mandates direct communication with a detonator.

22. *Secondly*, the 873 Patent does not require the absence of *all* wires. The 873 Patent removes wires going to the control unit (eg, blasting machine). The problem identified is that prior art systems "*employ physical connections between the detonators to be fired **and a control unit such as a blasting machine***" (p 1.24-25). The solution presented permits "*wireless initiation devices at a blast site to be controlled and optionally fired in separate groups in the **absence of physical connections to a control unit such as a blasting machine***" (p 19.20-22). "*[T]he methods of the present invention avoid the need for wired connections **to** initiation devices …*" (p 36.21) (emphases added).

23. *Thirdly,* the 873 Patent contemplates wires between the WID and the detonator by reference to a "*top-box*". A WID can optionally comprise a top-box (p 13.2). Top boxes "*are typically located above-ground or at least in a position in, at or near the borehole that is more suited to receipt and transmission of wireless signals and/or for relaying those signals to the detonator down the borehole*" (p 11.26-28). Example 2, an exemplary embodiment describes "***communication means extending from each top-box to other components of a wireless initiation device including a detonator (not shown) located down the borehole***" (pp 29.29-30.2) (emphasis added).

24. As to her Honour's questions at PJ [835] referred to at OSA [42]: (1) Wireless in the phrase WID is used to describe the absence of wires going from the control unit (eg, blasting machine) to the WID. (2) A blasting machine, as defined, is not the only source of wireless command signals. A blasting machine is an example of a control unit (see paragraph 25 below). The claims do not refer to a blasting machine. (3) A WID without a detonator achieves initiation of an associated base charge by communicating with the detonator. "*Initiate*" has a broad functional definition (p 4.9-11).

25. OSA [43] erroneously reasons that the only source of wireless signals is a blasting machine and the definition of "*blasting machine*" requires the WID to include an ED. There are passages which make it plain that a blasting machine (as defined) is only an example of a control unit. See: "*control unit **such as** a blasting machine*" (p 19.21-22); "*a blasting machine **or other device** may*" (p 21.20-21); "*an associated communicating device **such as** a blasting machine*" (p 26.29) (emphasis added).

26. ***Construction of "wireless electronic booster"***. OSA [44] does not confront the fact that a WEB can have a detonator outside the WID. OSA [44] says that Mr Jacobson "*plainly had relevant expertise as to how detonators interacted with complementary equipment*"

but Orica's closing submissions said that Mr Jacobson "*is not representative of the PSA*" ([1.53]) and he "*expressly acknowledge[d] that the use of an operation of wireless electronic boosters went beyond the scope of [his] expertise*" ([26.18]). Orica also walks away from the evidence of Mr Papillon, who it accepted was a PSA (Orica closing submissions at [1.16]). Cf OSA [45], Mr Papillon's evidence was not a short response about the defined term "*WEB*" in isolation. The response was given in the context of claim 15, and provided more than once (T1327.43-1337.18; T1333.24-29).

27. ***Whether limited to EDs***. Cf OSA [45], her Honour's application of 079/165 Patent reasoning is not a "*false issue*". The claims of those patents use the term "*wireless detonator assembly*". That term is quite different to WID in that it *requires* an integral detonator. OSA [45] attempts to avoid that difficulty by relying on the definition of "*wireless*". That should not be permitted for the reasons above. This is particularly so where the specification makes clear that it is not limited to EDs: see "'*Wireless detonator assembly' – refers in general to an assembly encompassing* ***a detonator, most preferably an electronic detonator***" (p 11.31-32; emphasis added). Other than in that extract and the definition of "*blasting machine*", the phrase "*electronic detonator*" is used just twice in the specification, both in the background to the invention (p 1.18, p 1.22).

28. ***Novelty***. OSA [46] says that DNAP cannot now assert that the WID in Rothenbuhler is the remote alone because it abandoned that argument at trial. The asserted prejudice to Orica is that it "*lost the opportunity to address the primary judge on it orally.*" Given the primary judge found that a WID must include a detonator, it would not have mattered if Orica had addressed the issue orally. In any event, Orica can now address the argument and the Full Court is in the same position as her Honour in considering it.

29. OSA [48] submits that, on either of DNAP's formulations, there is no WID in Rothenbuhler because neither is "wireless" and Rothenbuhler does not disclose an ED. As above, the 873 Patent does not require an ED. Further, the definition of wireless in the 873 Patent does not automatically apply to a WID for the reasons set out above. The remote alone is wireless in the sense required by the 873 Patent because there are no wires from the remote to the control unit. The remote with detonator is also wireless within the meaning of the 873 Patent, analogously to the use of a top box.

30. OSA [49] seeks to defend her Honour's erroneous finding on the "*blasting machine*" in Rothenbuhler on the basis that "*wireless*" refers to a connection between the detonator and the "*blasting machine*". As above, those definitions do not apply and the claims do not require a "*blasting machine*", let alone "*the blasting machine*" as defined.

31. In relation to claim 2, OSA [50] says that DNAP has not pointed to any context indicating why "*blasting machine*" (as defined) should not be applied and the claims should not be confined to EDs. However, the claims do not require a "*blasting machine*"; the specification refers to a "*blasting machine*" as an example of a control unit. The claims do not refer to EDs (or detonators at all) and EDs are, at best, only "*preferred*" (p 11.31-32). Any CGK regarding how blasting machines were configured to work with EDs is not relevant (cf OSA [52]). As to claims 3, 4, 6, 11 and 16, OSA [53] is mistaken. Her Honour *did not* make any findings regarding the absence of additional integers in these claims from Rothenbuhler. The findings identified at OSA [53] relate to other prior art, the 1670 Operations Manual and the 1670 Brochure, *not* Rothenbuhler. Orica did not file a notice of contention on these claims and so they follow claims 1 and 2.

32. ***Inventive step***. OSA [54] does not confront the agreement of the experts in the 873 JER that if a WID did not and need not include a detonator, the features of claim 1 and 2 were CGK. PJ [802] says that agreement is undermined by the purported misunderstanding of when a device is wireless within the meaning of the 873 Patent. However, if, as DNAP submits, her Honour erred in her construction of the 873 Patent, it is not undermined.

33. OSA [56], which downplays her Honour's failure to properly consider the experts' acceptance that the Rothenbuhler device (the 1670 model) was CGK, is not a fair characterisation of the evidence. The experts agreed that the skilled person would have known and understood Jacobson 1 [27]-[33]; [32] listed matters which Mr Jacobson considered were CGK at the priority date. Subparagraph (d) referred to remote blasting systems, including the Rothenbuhler Engineering RFD products which are discussed further in his affidavit. Contrary to OSA [57], the reasons the experts considered Rothenbuhler to be CGK are apparent having regard to the evidence (see, eg, T1253.11-22, where Mr Napier made it clear that he had heard of the use of the Rothenbuhler device and seen it at trade shows, although he had not seen its use in mines).

34. As to dependent claims 8, 9, 13 and 15, save for claim 15, her Honour did not make any findings of independent validity and Orica did not file a relevant notice of contention. In any event, OSA does not address claims 8 or 9. As to claim 13, it was CGK that devices could be programmed to enter a low power state which could be described as deactivation (T1240.36-T1243-33). As to claim 15, cf OSA [55], DNAP need not overcome PJ [970] as it relates to Mr Jacobson and Mr Napier. Mr Papillion, for Orica, accepted it would be routine to put the detonator into a booster (T1019.21-46). DNAP does not press its challenge to claims 5, 7, 10, 12, and 14, which are not asserted to be infringed.

C. 943 PATENT

35. ***Manner of manufacture***. DNAP does not accept that the cases identified at OSA [62] are even analogous, much less relate to the same argument. In *Sanofi-Aventis Australia Pty Ltd v Apotex Pty Ltd (No 3)* (2011) 196 FCR 1, Apotex's argument was that the treatment of psoriasis would have been an "*inevitable result*" of the teaching in the prior EP patent. However, the prior EP patent made no reference to psoriasis. In *Interpharma Pty Ltd v Hospira Inc (No 5)* (2019) 149 IPR 182, the claimed use was "*not the same as, or even analogous to, the **use** disclosed in US 214*": at [482]. The same is true for *Otsuka* which, as noted in DNAP's submissions in chief at [87], involved an argument that combined the disclosure of the prior art with the CGK and was rejected on the basis that the prior art did not disclose particular integers of the claim: see [351]-[354].

36. In this case, the experts agreed in the 943 JER 7D, 7F and 7H that claim 1 was disclosed by various examples in WO 837 – that is, the prior art disclosed the *same* use.

37. OSA [64]-[67] misreads *Merck*. The Full Court at [23] noted that the primary judge made it clear that he was "*having regard only to disclosures in the specification itself*". At [26], the Full Court said: "*We consider that the correctness or otherwise of his Honour's reasoning depends upon an examination of the Patent specification in light of the decision of the High Court in Philips to determine whether the subject matter of the claims was a manner of new manufacture for the purposes of s 6 of the Statute of Monopolies … That question requires us to construe the specification.*" At [38]-[39], the Full Court observed that Strein and Goodship were expressly incorporated.

38. Unsurprisingly, in light of those comments, there is no analysis in *Merck* of whether the teachings in Strein and Goodship were in fact well known and well understood, or formed part of the CGK. There did not need to be, because of the incorporation by reference, as DNAP's closing submissions made clear at [105]-[106]. DNAP has not changed its position in this regard, contrary to OSA [68]. In the present case, the incorporation by reference in the 943 Patent invites a comparison with the information in WO 837 for the purpose of assessing whether any patentable invention is disclosed.

39. Contrary to OSA [70], the 943 Patent does not contradict that WO 837 was known. The passage relied on by Orica (943 Patent at p 32.8-12) asserts that no admission is made to the effect that any "*prior publication (or information derived from it) or known matter*" referred to in the specification "*forms part of the common general knowledge*". This entails that the matter in question was "*known*". It is not necessary that it be admitted to have been CGK. Further, as submitted, the passage incorporating WO 837 by reference

describes its contents as "*previous advancements in the art relating to the selective control of detonators or detonator assemblies in groups*" (at p 15.15-20).

40. In response to OSA [71], the grace period is expressly for "*the purpose of deciding whether an invention is novel or involves an inventive step or innovative step*": s 24(1). Those requirements are in s 18(1)(b) (and, for innovation patents, s 18(1A)(b)). It has no application to the manner of manufacture requirement imposed by s 18(1)(a).

41. Contrary to OSA [74], DNAP's argument is not about what may happen or could happen: it is about what the experts agreed was disclosed by the 873 Patent. As to OSA [75], Mr Grace for Orica accepted that Example 5 is underground (T1704.4-14) and Mr Dunstan agreed (T1705.1-4); and the experts' answer to 7H of the 943 JER was not disturbed by the cross-examination referred to in Orica's footnote 88.

42. In answer to OSA [76], it is necessary to characterise the invention as a matter of substance, not form, and to do so in light of the specification as a whole (including any incorporated by reference documents) and the CGK: see, eg, *Myriad* at [12], [39], [87]-[94], [144]-[145]. The incorporation of additional features drawn from known blasting methods of the kind referred to in the dependent claims of the 943 Patent cannot confer manner of manufacture. That is particularly so, in circumstances where there is no assertion that they are new or part of what is put forward as the "*invention*". The matters DNAP contended were known or not asserted to be new were clearly identified in its pleading (Pt A Tab 10 at [85]-[103]) and its closing submissions below.

43. ***Inventive step***. As to OSA [78], the finding at PJ [1086] had the effect of excluding Mr Dunstan's knowledge. As to OSA [79], DNAP's submission below was that the terms should be construed consistent with the definition in the 943 Patent. It should not be precluded from raising the inconsistency of the judge's construction with that definition on appeal. Contrary to OSA [80], the answers to 943 JER 5A-5E indicated that the skilled person appreciated that the "*invention*" was feasible, although regulatory constraints applied to its implementation. Since those constraints were not solved by the 943 Patent, they cannot render the claims inventive: cf OSA [81]-[82].

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