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Oslo, 2020.01.31

Your ref.: 131262/JH  
Application no.: 20190828 (please include in your reply)  
Applicant: VETCO GRAY SCANDINAVIA AS  
Due date: 2020.07.31

## Office action in patent application no. 20190828

### Basis of the opinion

*Description:* received 2019.07.01.

*Claims:* received 2019.07.01.

*Drawings:* received 2019.07.01.

### Summary of the assessment:

The subject matter of the invention is considered to be new, but does not involve an inventive step and therefore does not meet the patentability criteria.

### Results of the novelty search:

Reference is made to the following documents (D):

D1: WO 2019/125174 A1  
D2: WO 2018/102900 A1  
D3: CN 203703360 U  
D4: WO 2012/101525 A1  
D5: WO 2015/071684 A2

### Assessment of patentability

The following is a reasoned statement with regard to novelty and inventive step, ref. Norwegian Patents Act, section 2, first paragraph.

#### *Novelty*

The application relates to a vertical branch inline manifold system for installation of a pipeline conveying hydrocarbon fluids along the seabed, cf. claims 1-9.

Document D1, which is considered to represent the prior art closest to the subject matter of independent claim 1, discloses a hydrocarbon production inline manifold system comprising (see Fig. 4 & 5) an inline manifold header 21 with plurality of valves 22 with connection ports (hubs), that connect through a chock bridge (jumper) 14 to a connection

hub at x-mas 5b. The valves longitudinal axis is arranged perpendicular to the manifold header axis and the valves longitudinal axis is in common plane with the header pipeline axis. The header pipeline 21 is inline with the flowline 35, 18 (see abstract; figures. 1-5; page 9, lines 19-32; page 11, lines 16-31).

The subject-matter of independent claim 1 differs from the disclosure of D1 in that the flowline (10) in the inline manifold system is located inside a carrier pipe (9).

It is our opinion, in view of cited prior art, independent claim 1 is novel according to Norwegian Patents Act section 2, first paragraph. The corresponding dependent claim 2-9 are also novel as they are referring to independent claim 1.

#### *Inventive step*

The objective technical problem to be solved by the subject-matter of independent claim 1, in view of D1, may be regarded as how to provide an alternative manifold system integrated on a pipeline at an assembly stage that allows at least one branch to be installed while at the same time the inline manifold system is allowed to be installed and launched through the tensioner system and the stringer on the pipe lying vessel (applications description page 2, lines 5-10).

Document D2 discloses an inline accessory structure for subsea pipeline (see figures 1,5), the in-line tee (ILT) 10 comprises a substantially straight pipe 12 that is installed directly in-line with adjoining sections of a subsea pipeline 14. The pipe 12 and the adjoining sections of the pipeline 14 share a common central longitudinal axis 16. The pipeline 14 is represented in dashed lines in Figure 1 is concentric pipe- in-pipe construction with pipe 12 of the ILT 10 (see abstract; figures 1-6; page 10, lines 24-34, page 11, line 1-12).

A person skilled in the art facing the objective technical problem, would combine the concentric pipe-in-pipe construction arrangement in document D2 with the inline manifold header described in document D1 and conduct the invention according to independent claim 1. Thus, the inline manifold system according to independent claim 1 does not involve an inventive step, cf. Norwegian Patents Act, section 2, first paragraph.

The distinguishing features of the dependent claims 2-4 are: the hubs longitudinal alignment system (23); the carrier frame (3) for the plurality of hubs; and the frame spacer (4) extended between each of the carrier frame (3). All these features are known from document D1. Document D1 discloses, as shown in figure 5, a manifold header assembly is provided with a support frame 30 formed of a network of beams 31. This engages and partly surrounds the manifold header 21, valves 22 and forging 23. It provides rigidity and is used to assist in the location of the manifold header assembly.

Accordingly, the subject matter of dependent claims 2-4 does not involve an inventive step, cf. Norwegian Patents Act, section 2, first paragraph.

The subject matter of dependent claims 5, 6 and 8 describes hinged mudmat elements in the alignment system with locking arrangement and plane of the hinged mudmat elements in an unfolded position is perpendicular to each of the longitudinal axes of the plurality of hubs.

Document D3 shows an underwater foldable inline manifold where two foldable anti-sinking plates (mudmat) are hinged on the main pipeline frame and arranged symmetrically by taking the main pipeline as a center. Further, the hinged mudmat elements in an unfolded position are perpendicular to the longitudinal axes of the plurality of hubs (see abstract and Figures 1-2).

Document D4 discloses an accessory for a subsea pipeline (12) such as an in-line tee, where figures 4 to 7 of the drawings shows, the in-line structure as an ILT 36 and comprises a frame 38 to which two folding mudmats 40, 42 are pivotably attached. Moreover figure 10 shows the unfolded position of the hinged mudmat elements are perpendicular to the longitudinal axes of the plurality of hubs. (see abstract; Figures 4-7, 9; page 9, line 33 – page 9, line 7; page 10, lines1-6).

Accordingly, the subject matter of dependent claims 5-6 and 8 does not involve an inventive step, cf. Norwegian Patents Act, section 2, first paragraph.

The distinguishing feature in dependent claim 7 is, a bend restrictor is fixed to each end of the carrier pipe (9). Bend restrictor is known in the art and merely represent normal design option for the skilled person. For example Document D5 discloses a bend restrictor for use with an offshore longitudinally extensive protection apparatus (see abstract; Figures 1,3, 10-13).

The distinguishing feature of the dependent claim 9 is a connection pipe (13) is forming a T-branch with the flowline (10), this is either known from D1-D4 or merely represent normal design option for the skilled person (see search report).

Accordingly, the subject matter of dependent claims 7 & 9 does not involve an inventive step, cf. Norwegian Patents Act, section 2, first paragraph.

Defects and observations:

None

Instructions

It is not at present apparent which part of the application could serve as basis for new, allowable claims.

Should the applicant nevertheless regard some particular matter as patentable, a new independent claim should be filed, together with dependent claims if appropriate, taking account of the assessment above. The new set of claims must comply with Examination Guidelines, part C, Chapter III, 3.1.2 with respect to the number of independent claims of same category, or convincing arguments as to why the new set of claims does in fact comply with these provisions must be submitted.

When a patent claim is amended, the applicant shall state where in the application as filed support for the amendment is found, see Patent Regulations, Section 20. If an amended description is filed, the applicant shall specify which parts of the description are not in accordance with the previously filed description and specify in which way the amendments imply anything new in respect of the substantive content, see Patent Regulations, Section 21.

#### Time limit for response

You are invited to submit a written response within the due date above. You may respond via [Altinn](#). If you fail to respond, the application will be shelved. However, the processing of the application may be resumed by paying a fee. Ref. Norwegian Patents Act, Section 15, third paragraph and Regulation Relating to Payments etc. to the Norwegian Industrial Property Office and the Board of Appeal for Industrial Property Rights (Regulation on fees), Section 26. You may request an extension of the due date, see «patentretningslinjene del A, kap. I, punkt 5.1» Examination Guidelines, part A, Chapter I, 5.1 (in Norwegian only). This must be done within the due date.

For general provisions regarding submitting of documents and payments, see Regulation on fees, Sections 1-6 and 8.

#### Additional information to the applicant

##### Application documents in English - provisional protection

The patent application will be published 18 months after it was first submitted. In order to obtain provisional protection for the invention described in the application from the publishing date, you must submit a translation of the claims into Norwegian. The patent claims in Norwegian will form the basis for provisional protection during the application period. The provisional protection applies only insofar as the Norwegian and English texts correspond with each other. Provisional protection takes effect once you have supplied a translation of the claims and we have published a notice of this in the Norwegian Official Patent Gazette (Norsk patenttidende).

##### Postponement of grant

A prospective grant of a patent implies that all documents of the application become publicly available, even when this happens earlier than 18 months after the filing date. However, you may request that the grant of the patent shall be postponed until the application becomes publicly available according to Norwegian Patents Act, Section 22, second paragraph, i.e. after 18 months, see Regulations to the Norwegian Patents Act (Patent Regulations), Section 33. The request for postponement should be filed in a separate letter.

##### Supplementary search

A novelty search is not considered to be complete if it was carried out at a time when the newest relevant material was not yet included in the search material. You can request a supplementary search to disclose whether there exist older patent applications, not publicly available when the first novelty search was done. This may be national patent applications, EPO applications that may apply to Norway, see Norwegian Patents Act, Section 66f or international patent applications that have been continued in Norway according to Norwegian Patents Act, Section 31. Such applications may prevent novelty according to Norwegian Patents Act, Section 2, second paragraph, second sentence. A supplementary search can not be carried out until after approximately 22 months from the filing date of the application.

#### For your information

Relevant laws and regulations, as well as Examination Guidelines are available on our webpage, [www.nipo.no](http://www.nipo.no).

Information to applicants using Altinn: You will find cited publications linked in the enclosed search report or as electronic attachments. They will be forwarded in paper format only if not available in electronic format or if protected by copyright.

Please contact us if you have any questions

Sincerely,

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Enclosures: search report