

**PATENT COOPERATION TREATY**

**PCT**

**INTERNATIONAL SEARCH REPORT**

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference <b>49067PCT CRW:SS</b>	<b>FOR FURTHER ACTION</b>	see Form PCT/ISA/220 as well as, where applicable, item 5 below.
International application No. <b>PCT/AU2018/000134</b>	International filing date ( <i>day/month/year</i> ) 14 August 2018	(Earliest) Priority Date ( <i>day/month/year</i> ) 15 August 2017
Applicant <b>AUSTOFIX GROUP LIMITED</b>		
This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau. This international search report consists of a total of <b>9</b> sheets. <input type="checkbox"/> It is also accompanied by a copy of each prior art document cited in this report.		
<p>1. <b>Basis of the report</b></p> <p>a. With regard to the <b>language</b>, the international search was carried out on the basis of:</p> <p style="padding-left: 20px;"><input checked="" type="checkbox"/> The international application in the language in which it was filed.</p> <p style="padding-left: 20px;"><input type="checkbox"/> A translation of the international application into , which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).</p> <p>b. <input type="checkbox"/> This international search report has been established taking into account the <b>rectification of an obvious mistake</b> authorized by or notified to this Authority under Rule 91 (Rule 43.6bis(a)).</p> <p>c. <input type="checkbox"/> With regard to any <b>nucleotide and/or amino acid sequence</b> disclosed in the international application, see Box No. I.</p> <p>2. <input type="checkbox"/> <b>Certain claims were found unsearchable</b> (See Box No. II).</p> <p>3. <input checked="" type="checkbox"/> <b>Unity of invention is lacking</b> (See Box No. III).</p> <p>4. With regard to the <b>title</b>,</p> <p style="padding-left: 20px;"><input checked="" type="checkbox"/> the text is approved as submitted by the applicant.</p> <p style="padding-left: 20px;"><input type="checkbox"/> the text has been established by this Authority to read as follows:</p> <p>5. With regard to the <b>abstract</b>,</p> <p style="padding-left: 20px;"><input checked="" type="checkbox"/> the text is approved as submitted by the applicant.</p> <p style="padding-left: 20px;"><input type="checkbox"/> the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.</p> <p>6. With regard to the <b>drawings</b>,</p> <p>a. the figure of the <b>drawings</b> to be published with the abstract is Figure No. <b>3</b></p> <p style="padding-left: 20px;"><input checked="" type="checkbox"/> as suggested by the applicant.</p> <p style="padding-left: 20px;"><input type="checkbox"/> as selected by this Authority, because the applicant failed to suggest a figure.</p> <p style="padding-left: 20px;"><input type="checkbox"/> as selected by this Authority, because this figure better characterizes the invention.</p> <p>b. <input type="checkbox"/> none of the figures is to be published with the abstract.</p>		

**Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)**

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1.  Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:  
the subject matter listed in Rule 39 on which, under Article 17(2)(a)(i), an international search is not required to be carried out, including
2.  Claims Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3.  Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a)

**Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)**

This International Searching Authority found multiple inventions in this international application, as follows:

**See Supplemental Box for Details**

1.  As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2.  As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees.
3.  As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4.  No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

**Remark on Protest**

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.

## INTERNATIONAL SEARCH REPORT

International application No.  
**PCT/AU2018/000134**

## A. CLASSIFICATION OF SUBJECT MATTER

**A61B 17/17 (2006.01) A61B 17/72 (2006.01) A61B 34/20 (2016.01)**

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

PATENW: CPC/IPC: A61B5/05/LOW, A61B5/064, A61B5/6847/LOW, A61B17/17/LOW, A61B17/1707, A61B17/1725, A61B17/72/LOW, A61B17/7241, A61B34/20/LOW, A61B2034/2051, A61B2034/2072, A61B2034/256, A61B2560/0223/LOW, A61B2562/0223, A61B90/39/LOW, A61B2090/397, A61B2090/3983; and Keywords: intramedullary, nail, transducer, offset, table; and like terms.

GOOGLE PATENTS and ESPACENET: CPC: A61B17/1707, A61B17/1725, A61B17/72/LOW, A61B2034/2051, A61B2034/2072, A61B2034/256, A61B2090/3983; and Keywords: intramedullary, nail, transducer, controller, offset, identifier; and like terms.

Applicant/Inventor search in EPODOC. Applicant and inventor names also search in internal databases provided by IP Australia.

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Documents are listed in the continuation of Box C		

 Further documents are listed in the continuation of Box C See patent family annex

* Special categories of cited documents:		
"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention	
"E" earlier application or patent but published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone	
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art	
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family	
"P" document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search  
3 October 2018Date of mailing of the international search report  
03 October 2018

## Name and mailing address of the ISA/AU

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INTERNATIONAL SEARCH REPORT C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		International application No. <b>PCT/AU2018/000134</b>
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2005/0261700 A1 (TUMA et al.) 24 November 2005 abstract, and paragraph [0014 – 0015] and [0021]	1 – 16
A	US 2010/0152573 A1 (RITCHEY et al.) 17 June 2010 Figure 25 – 29; and paragraph [0134], [0136 – 0139], [0147 – 0148] and [0150]	1 – 16
A	US 2005/0080427 A1 (GOVARI et al.) 14 April 2005 Figure 7, 9 – 11; and paragraph [0032], [0086], [0088], [0094], [0100] and [0102]	1 – 16
A	US 2005/0070916 A1 (HOLLSTIEN et al.) 31 March 2005 Figure 1 and 5; abstract, and paragraph [0001], [0030] and [0038]	1 – 16
A	US 5584838 A (RONA et al.) 17 December 1996 Figure 1, 2, 8, 12 and 13; abstract, column 4 line 44 – 50, column 8 line 21 – 23, and column 14 line 31 – 32	1 – 16
A	US 2009/0088756 A1 (ANDERSON) 02 April 2009 Figure 1 – 7; abstract, and paragraph [0020 – 0021], [0025], [0033], [0038], [0042] and [0045 – 0047]	1 – 16
A	WO 2012/051512 A1 (VIRGINIA TECH INTELLECTUAL PROPERTIES, INC.) 19 April 2012 Figure 5, 6, 9, 12A, 13 and 15A – 15C; abstract, p 10 line 9 – 14, p 16 line 5 – 7, p 12 line 9 – 12, p 20 line 26 – 28, p 21 line 6 – 9, and p 28 line 21 – 25	1 – 16

**Supplemental Box****Continuation of: Box III**

This International Application does not comply with the requirements of unity of invention because it does not relate to one invention or to a group of inventions so linked as to form a single general inventive concept.

This Authority has found that there are different inventions based on the following features that separate the claims into distinct groups:

- Claims 1 – 9 and 13 – 16 are directed to an electromagnetic intramedullary nail screw positioning system comprising a memory storing an offset associated with an intramedullary nail identifier; and using the electromagnetic intramedullary nail screw positioning system to estimate a location of a target aperture in the nail, wherein the offset is applied to one or more positioning measurements from the electromagnetic intramedullary nail screw positioning system to generate an updated estimate of the location of a target aperture in the nail, and the updated estimate is indicated to a user.
- Claims 10 – 12 are directed to a method of generating an offset table for a memory in a controller of an electromagnetic intramedullary nail screw positioning system comprising for each intramedullary nail in a set of intramedullary nails types, where each type comprises a unique combination of nail diameter, nail composition and nail length, inserting an intramedullary nail in an electromagnetic intramedullary nail screw positioning system, and measuring an offset of the inserted intramedullary nail with respect to the reference nail.

PCT Rule 13.2, first sentence, states that unity of invention is only fulfilled when there is a technical relationship among the claimed inventions involving one or more of the same or corresponding special technical features. PCT Rule 13.2, second sentence, defines a special technical feature as a feature which makes a contribution over the prior art.

When there is no special technical feature common to all the claimed inventions there is no unity of invention.

In the above groups of claims, the identified features may have the potential to make a contribution over the prior art but are not common to all the claimed inventions and therefore cannot provide the required technical relationship. Therefore there is no special technical feature common to all the claimed inventions and the requirements for unity of invention are consequently not satisfied *a priori*.

Please also note that claims 11 and 12 are method claims which have been appended to system claims 1 or 2 respectively. Method claims 11 and 12 also refer to antecedent features (i.e. “the (set of) measured alignment offsets”) that are present in method claims 10 and 11, respectively; and not in system claims 1 and 2. Therefore, for the purpose of examination, claim 11 is construed as being appended to claim 10 and claim 12 is construed as being appended to claim 11 (as discussed in Box VIII).

**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International application No.

**PCT/AU2018/000134**

This Annex lists known patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

<b>Patent Document/s Cited in Search Report</b>		<b>Patent Family Member/s</b>	
<b>Publication Number</b>	<b>Publication Date</b>	<b>Publication Number</b>	<b>Publication Date</b>
US 2005/0261700 A1	24 November 2005	US 2005261700 A1	24 Nov 2005
		US 8382759 B2	26 Feb 2013
		EP 1593350 A1	09 Nov 2005
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		AU 2016200287 A1	11 Feb 2016
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		AU 2017210490 A1	21 Sep 2017
		AU 2018226395 A1	27 Sep 2018
		CA 2678369 A1	04 Sep 2008
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		CA 2759694 A1	11 Nov 2010
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		CN 101621966 A	06 Jan 2010
		CN 101621966 B	19 Jun 2013
		CN 102014771 A	13 Apr 2011
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		CN 102458292 A	16 May 2012
		CN 102458292 B	24 Sep 2014
		CN 102802547 A	28 Nov 2012
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CN 104799904 A	29 Jul 2015		
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Due to data integration issues this family listing may not include 10 digit Australian applications filed since May 2001.

Form PCT/ISA/210 (Family Annex)(January 2015)

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Information on patent family members

International application No.

**PCT/AU2018/000134**

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<b>Patent Document/s Cited in Search Report</b>		<b>Patent Family Member/s</b>	
<b>Publication Number</b>	<b>Publication Date</b>	<b>Publication Number</b>	<b>Publication Date</b>
		EP 2114264 A1	11 Nov 2009
		EP 2257229 A1	08 Dec 2010
		EP 2257229 B1	08 Nov 2017
		EP 2424455 A2	07 Mar 2012
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		EP 3354212 A1	01 Aug 2018
		JP 2012525222 A	22 Oct 2012
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		KR 20120027252 A	21 Mar 2012
		KR 101713351 B1	07 Mar 2017
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International application No.

**PCT/AU2018/000134**

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<b>Patent Document/s Cited in Search Report</b>		<b>Patent Family Member/s</b>	
<b>Publication Number</b>	<b>Publication Date</b>	<b>Publication Number</b>	<b>Publication Date</b>
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		WO 2010129141 A2	11 Nov 2010
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Form PCT/ISA/210 (Family Annex)(January 2015)



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<b>Publication Number</b>	<b>Publication Date</b>	<b>Publication Number</b>	<b>Publication Date</b>
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**End of Annex**

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