

9-Axis MEMS IMU

Technology and Patent

Infringement Risk Analysis

STMicroelectronics LSM9DS0 / Bosch Sensortec BMX055 /
InvenSense MPU-9250

REPORT SAMPLE



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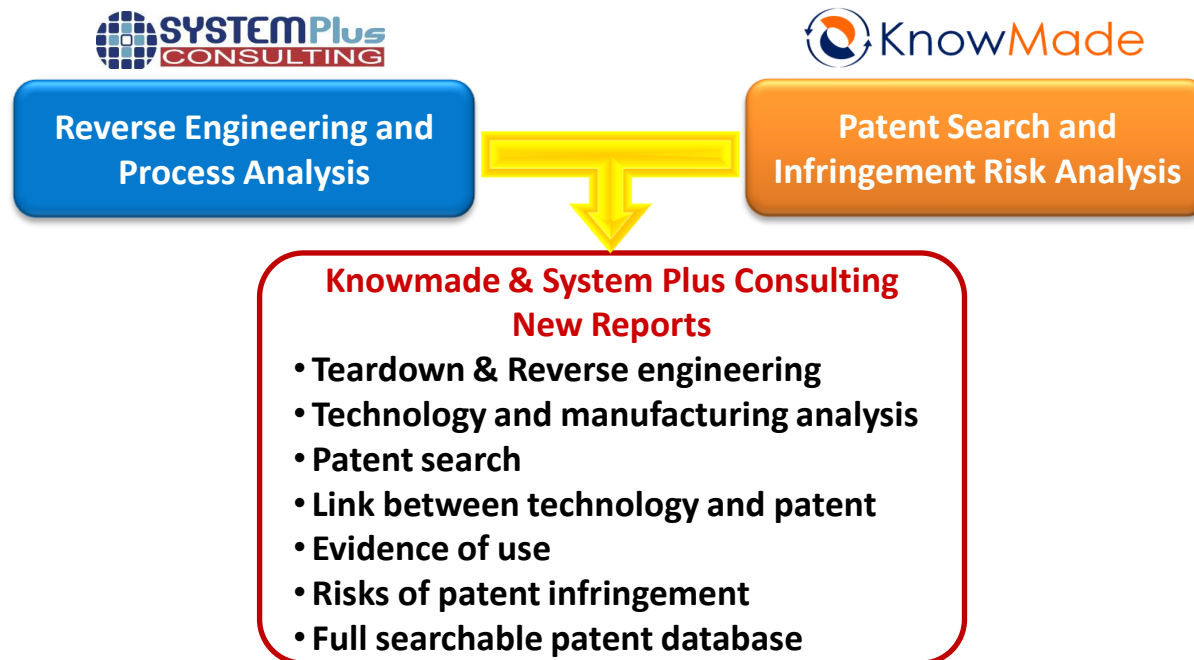


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A New Type of Report

For the first time, Knowmade (specialized in patent analysis) and System Plus Consulting (specialized in reverse engineering and reverse costing) are joining their unique added value in order to combined technology and manufacturing analysis with patent claims understanding in order to highlight the risks of patent infringement.

- Knowmade has developed methodologies to identify patents related to product features.
- By combining their technical knowledge, process flow understanding and patent search, System Plus Consulting and Knowmade are able to provide a clear link between patents and marketed products.
- In-depth analysis of the links between technology and patents provided in this report will lead to understanding product features and related patents, and to highlight the potential risks of patent infringement.



The Authors



- Headquartered in Sophia Antipolis, France, **Knowmade** is specialized in analysis of patents and scientific research findings. We provide patent search, IP landscape, patent valuation, IP due diligence, freedom-to-operate, IP competition analysis, scientific literature landscape, scientific state of the art, technology scouting, technology transfer, alerts and updates. Our service offer consists of custom studies, analysis reports, on-demand tracking and strategy consulting. Knowmade combines information search services, scientific expertise, powerful analytics and visualization tools, and proprietary methodologies for analyzing patents and scientific information. With a solid focus on Microelectronics, Compound Semiconductors, LED, MEMS, Nanotechnology and Biotechnology, **Knowmade** supports research laboratories, industrial companies and investors in their business development.
- Headquartered in Nantes, France, **System Plus Consulting** is specialized in technology and cost analysis of electronic components and systems in the fields of Integrated Circuits, Power Devices and Modules, MEMS & Sensors, LED, Image Sensors, Packaging including wafer level, Electronic Boards and Systems. The company offers custom reverse costing analyses, standard reverse costing reports and costing tools. These analyses are used by Purchasing Departments to measure their suppliers' cost structure, R&D Departments to confirm technological choices depending on their impact on costs, and Benchmarking/Marketing Departments to monitor the products on the market.

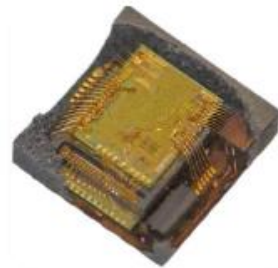
Disclaimer: Knowmade and System Plus Consulting are research firms that provide technical analysis and opinions. They do not provide any insight analyses or counsel regarding legal aspects or the validity of any individual patent. The research, technical analysis and/or work contained herein is not a legal opinion and should not be construed as such.

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Scope of the Study (1/2)

- This report provides a technology and patent infringement risk analysis of the newest 9-Axis MEMS IMU supplied by STMicroelectronics, Bosch Sensortec and InvenSense.
- This report does not provide detailed claim charts and legal opinions regarding patent infringements. The risks of patent infringement highlighted in this report require more in-depth legal assessments to be confirmed.



**STMicroelectronics
LSM9DS0**



**Bosch Sensortec
BMX055**



**InvenSense
MPU-9250**

The comparative study is focused on following product features

- ✓ **Bonding Process:** Al-Ge Eutectic Bonding.
- ✓ **Accelerometer/Gyro on a Single Chip:** Multiple sealed cavities with different pressures.
- ✓ **Sensing Area:** Gyro Single Structure.
- ✓ **Hybrid MEMS:** Vertically integrated electronics and wafer-scale hermetic packaging.
- ✓ **Micromachined layers:** Silicon Nitride as protective layer.

Scope of the Study (2/2)

Motion sensing combo sensor is a very hot topic, both in term of market potential and competition among the players. The growth of the applications of 6 and 9 degrees of freedom (DoF) devices is both pushing the leaders (STMicroelectronics, Bosch Sensortec and Invensense) and their challengers (AKM, Kionix, mCube, Freescale, Alps, Kionix... just to name a few) to develop innovative technical and manufacturing solutions, and, in parallel of course, to have the right patents to protect their inventions. But what are the similarities and the differences in term of technical and manufacturing choices at the devices level and what is the related patent situation?

This report highlight the **risks of patent infringement** between **STMicroelectronics**, **Bosch Sensortec** and **Invensense** in the field of **9 axis MEMS inertial measurement units (IMU)**. As the 9 axis IMUs are just starting to be adopted by the market, it is the right time now to understand what could happen between these 3 companies and how to differentiate patents and claims compared to the leaders.

2012 was seen by many as a turnkey year for consumer combo sensors (6 and 9 axis sensors). Since then, many developments have occurred, and the market acceptance of combo solutions has been extremely quick. According to Yole Développement, the combo sensor market is estimated to be \$446M in 2013, growing to \$1.97B in 2018. This represents 21% of the global inertial consumer market in 2013, and will grow to an impressive 66% by 2018. In this playground, **STMicroelectronics**, **Bosch Sensortec** and **InvenSense** are the 3 **market leaders in the inertial consumer sensors** with more than 50% of market share.

In a patent infringement action, the potential sales volume plays a major role for assessing the damage award. Moreover, there exists a history of patent disputes between these 3 leading players.

The **LSM9DS0**, **BMX055** and **MPU-9250** are the newest 9-axis MEMS IMU from **STMicroelectronics**, **Bosch Sensortec** and **InvenSense** respectively. These devices contain a 3-axis gyroscope, a 3-axis accelerometer and a 3-axis magnetometer.

This report is focused on some aspects presenting similar features between the 3 selected products and revealed by the reverse engineering performed by System Plus Consulting. These product features are mainly related to **accelero/gyro die** and they are not related to the magnetometer or the ASIC.

Key Features of the Report

- This report provides a deep insight on **technology data** and **manufacturing processes** (teardown analysis) of LSM9DS0, BMX055 and MPU-9250 9-axis IMU components, and **comparative studies of product features** (similarities & differences).
- It provides **patents related to the target product features** and held by STMicroelectronics, Bosch Sensortec and InvenSense.
- It provides discussions on the **potential patent infringement risks** by comparing relevant patent claim elements to the target product features and manufacturing processes.
- This report also provides an extensive **Excel database with all patents analyzed** in this study (60+ patent families composed of 200+ patents). This database allows multi-criteria searches:
 - Patent publication number
 - Hyperlinks to the original documents
 - Priority date
 - Title
 - Abstract
 - Patent Assignees
 - Legal status of the patent
- ❖ **Disclaimer: This report does not provide any insight analyses or counsel regarding legal aspects or the validity of any individual patent. Knowmade and System Plus Consulting are research firms that provide technical analysis and opinions. The research, technical analysis and/or work contained herein is not a legal opinion and should not be construed as such.**

Objectives of the Report

- Provide an overview of technology data and manufacturing process of LSM9DS0, BMX055 and MPU-9250 9-axis IMU components supplied by STMicroelectronics, Bosch Sensortec and InvenSense respectively.
- Find the technical and manufacturing process similarities and differences of LSM9DS0, BMX055 and MPU-9250 9-axis IMU components .
- Identify key patents held by STMicroelectronics, Bosch Sensortec and InvenSense, and related to the target product features and manufacturing processes.
- Find the link between patented technological solutions and marketed products.
- Identify the potential infringing parties, and help to find evidence of use.
- Identify potential risks of patent infringement, and identify the patents which require a more in depth legal assessment.

Methodology

Teardown Analysis

- Package is analyzed and measured.
- The dies are extracted in order to get overall data: dimensions, main blocks, pad number and pin out, die marking.
- Setup of the manufacturing process.



Comparative Study

- The similarities and differences of target of products are identified (product features and manufacturing processes).
- A set of product features and manufacturing processes is selected regarding their interest in terms of IP study.



Patent Search

- Patents are extracted from Questel-Orbit worldwide patent database by using keyword-based queries.
- The selection of relevant patents is done manually by expert review of the subject-matter of inventions.
- The patents are manually categorized regarding the selected product features.



Infringement Risks

- The links between the patented technologies and the target product features are established.
- The potential infringing parties of the target product are identified, and the potential risks of patent infringements are discussed.



MEMS Gyro & Accelerometer Structure

SAMPLE

COMPANY 1

Product 1

System in Package

✓ 1.0MM NPI size

✓ 2.0MM NPI size

✓ Connect directly with substrate



COMPANY 2

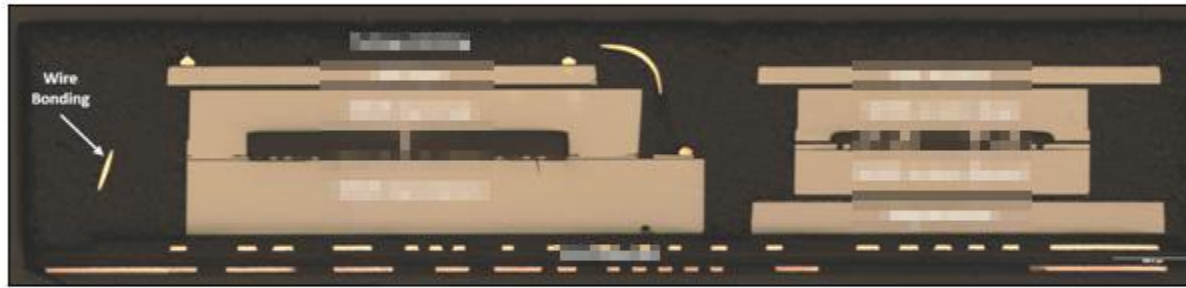
Product 2

System in Package

✓ 2.0MM NPI size

✓ 2.0MM NPI size

✓ Connect directly with substrate



COMPANY 3

Product 3

Single die

✓ 1.0MM NPI size

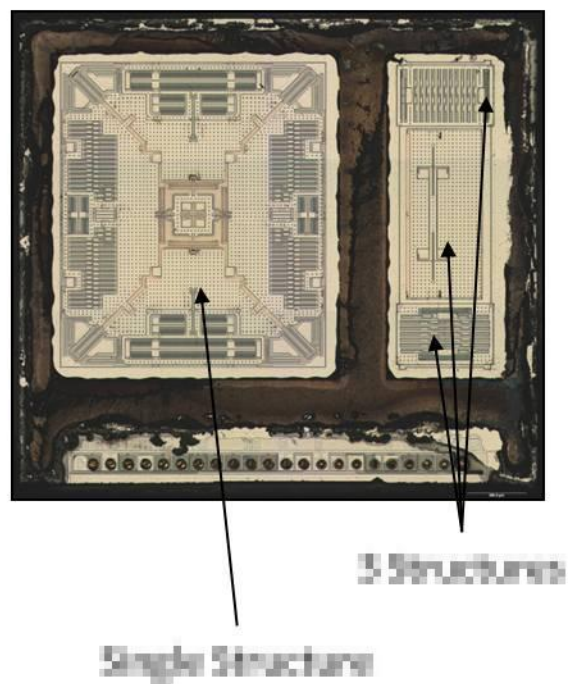
✓ 2.0MM NPI size



COMPANY 1

Product 1

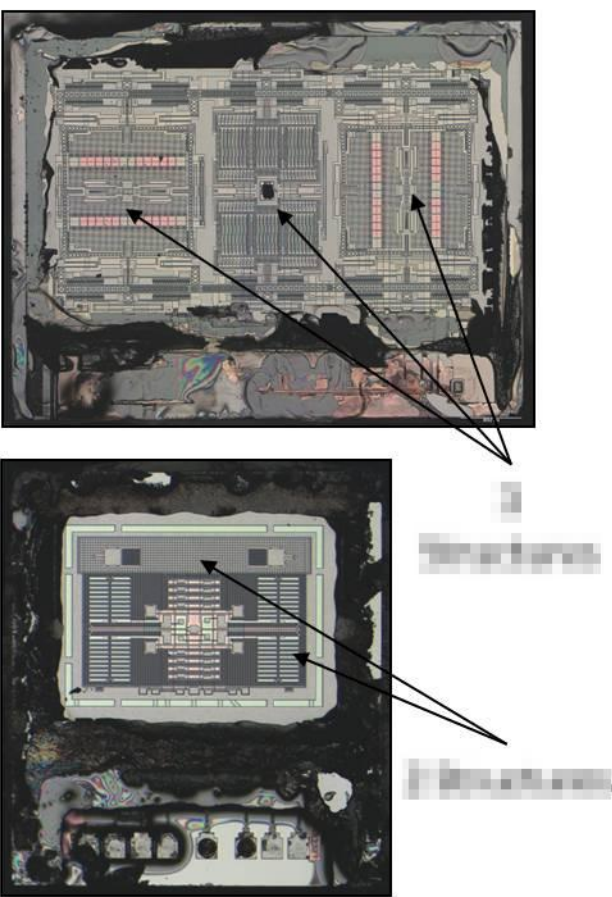
- ✓ Gyro: Single Structure
- ✓ Accelerometer: 2 Structures



COMPANY 2

Product 2

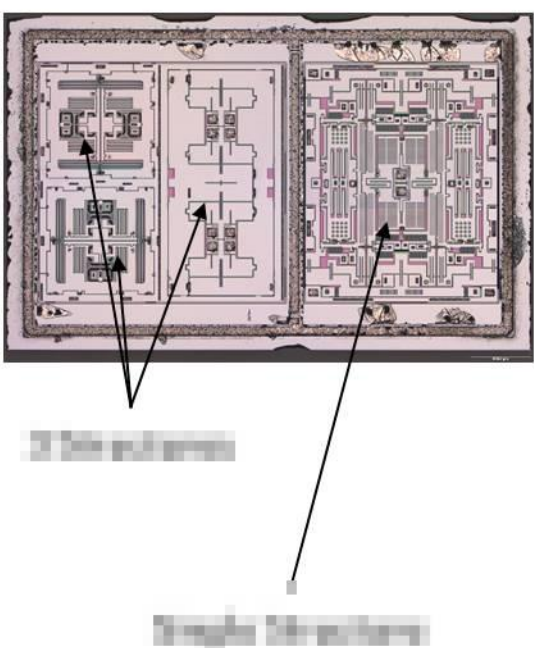
- ✓ Gyro: 2 Structures
- ✓ Accelerometer: 2 Structures



COMPANY 3









Product 3

- ✓ Gyro: Single Structure
- ✓ Accelerometer: 2 Structures





Matrix Product Features/Patent Portfolio

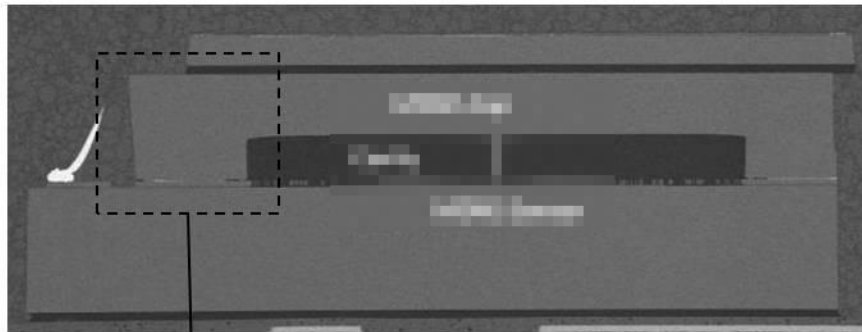
SAMPLE

FEATURES	Company 1		Company 2		Company 3		Main IP Players
	9-Axis MEMS Product 1	Identified patents	9-Axis MEMS Product 2	Identified patents	9-Axis MEMS Product 3	Identified patents	
Bonding process <i>Al/Ge eutectic bonding</i>				3 relevant patents		1 relevant patents	Intel, Analog Devices, Freescale, ST, TSMC, Power, Bosch, Renesas
Acoustic/ultrasonic signal processing <i>Highly integrated with digital processing</i>		2 relevant patents		1 relevant patents		1 relevant patents	Infineon, Renesas, Analog, Texas Instruments, ST, Freescale, Bosch, STMicroelectronics, Infineon
Low power consumption <i>Low power consumption</i>		1 relevant patents		1 relevant patents		1 relevant patents	Maxim Integrated, Qualcomm, Fairchild, Murata, Irvine Sensors, Continental Temic, Fraunhofer, ST Microelectronics, InvenSense
Highly integrated <i>Highly integrated with digital processing</i>				1 relevant patents		20 relevant patents	Infineon, ST, Bosch, Freescale, STMicroelectronics, Bosch
Highly integrated <i>Highly integrated with digital processing</i>		2 relevant patents		1 relevant patents			STMicroelectronics, Bosch

TEARDOWN

Product X Company X

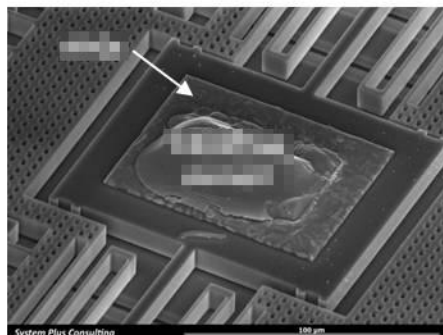
MEMS sensor and cap are sealed together with 
 process.



MEMS Cross-Section Overview



MEMS Sealing Cross-Section – SEM View






MEMS Sensing Area – SEM View

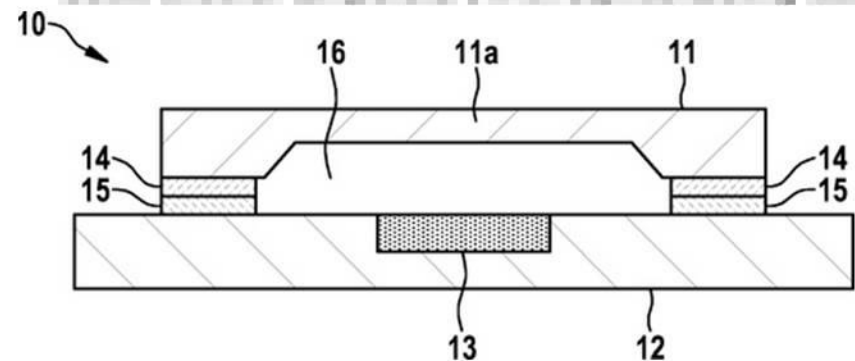
PATENT

Relevant Patent Families:  (2011),
 (2008),  (2007)

(2011)

Method for bonding substrates 





Al-Ge Bonding

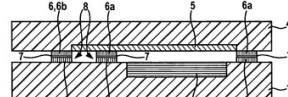
Patent Application Timeline

SAMPLE

Relevant patent family

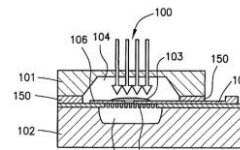
Related patent family

Fig. 3



DEXXXXXXX
WO, EP (granted), TW

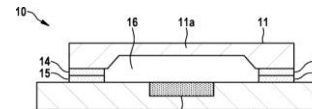
DEXXXXXXX



DEXXXXXXX
EP, US

XXXXXXXXXX

XXXXXXXXXX



XXXXXXXXXX

DEXXXXXXX

Earliest application date
of the patent family

2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014

Company A

Company B

Knowmade, 2014

XXXXXXX (granted)

USXXXXXX (granted)

USXXXXXXX

USXXXXXX (granted)

XXXXXXX (granted)

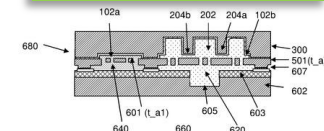
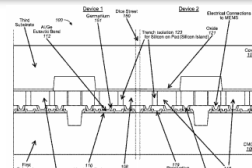
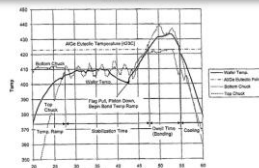
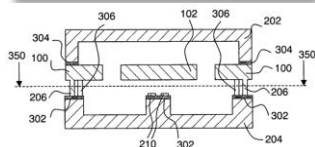
XXXXXXXXXX (granted)

USXXXXXX (granted)
WO, EP, KR (granted), CN, US (granted)

XXXXXXX (granted)

XXXXXXX (granted)
XXXXXXX (granted)

XXXXXXX (granted)



Note: The data corresponding to the years 2012-2014 may not be complete since a significant number of patent applications filed during these years might not have been published yet.

Multiple cavities with different pressures

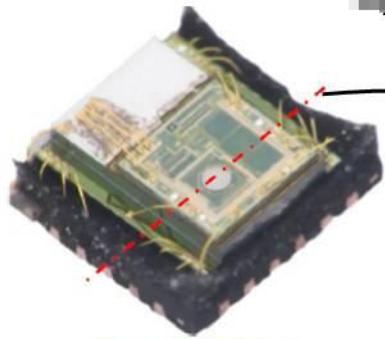
Patent Infringement Risk

SAMPLE

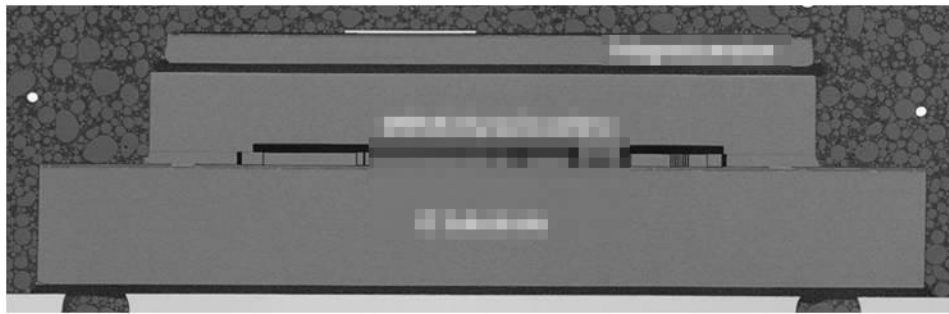
Company 1

Product 1

[REDACTED]
[REDACTED]



Cross-section 1 plane



Cross-Section Overview – SEM View



highly likely
infringement

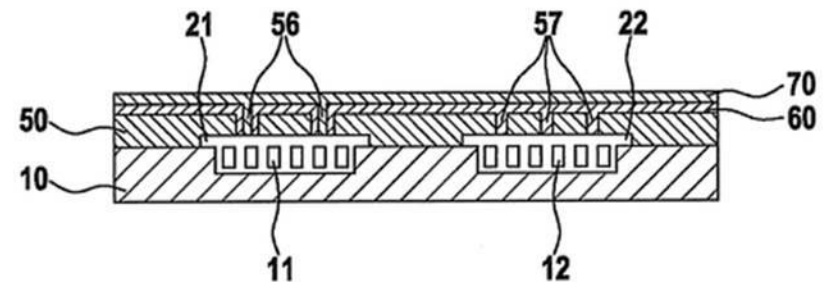
Company 2

Intellectual Property (IP) rights

Granted patents: US [REDACTED], US [REDACTED], EP [REDACTED],
[REDACTED], [REDACTED]

Scope of the claims of US [REDACTED]:

A method for manufacturing a micromechanical device including a substrate under having two or more cavities and one or more cavities, the cavities being hermetically separated from each other, the first cavity having a different internal atmospheric pressure from the second cavity.



Multiple cavities with different pressures

Patent Infringement Risk

SAMPLE

Company 1

Product 1



Company 2

Intellectual Property (IP) rights

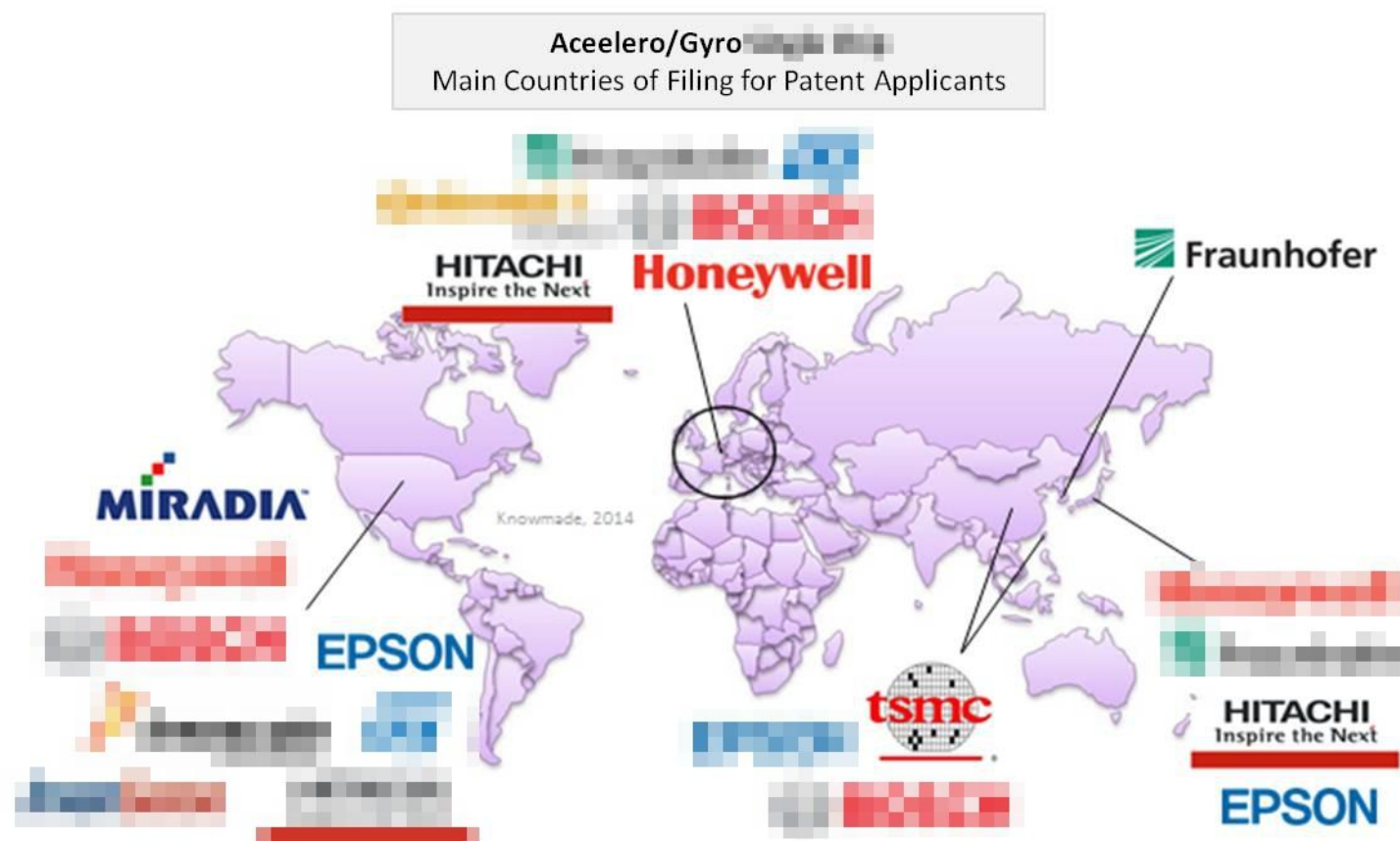
- According to **System Plus**, the **XXXX** component supplied by **Company 1** is composed of a accelero/gyro ~~single die with 3 cavities over the die~~ 3-axis accelerometer (~22% of die area) and over the die 3-axis gyroscope (~22% of die area). The cavities are etched using ~~CMOS process~~ process, and there is no trace of ~~getter~~ inside the ~~gyroscope~~ cavity. Each cavity is hermetically separated from the other by ~~300nm alloy sealant~~ sealant between ~~MEMS sensor and IC~~, the ~~MEMS cap being sealed to the MEMS sensor with a direct bonding process (fusion bonding)~~. The cavities have commonly different internal atmospheric pressures (the gyro cavity is usually at lower pressure than the accelero cavity).
- From **Knowmade** point of view, the accelero/gyro ~~single die~~ used in the **XXXX** component infringes valid and enforceable **Company 2** patents (US~~XXXXXX~~, US~~XXXXXX~~, EP~~XXXXXX~~, ~~XXXXXX~~, ~~XXXXXX~~). Indeed, several elements claimed by these patents are demonstrably present in the **XXXX** target product. **Company 2** patents claim a MEMS device including ~~a calculation module having at least one first cavity and at least one second cavity, the cavities being hermetically separated from each other.~~

Multiple cavities with different pressures

Main IP Competitors

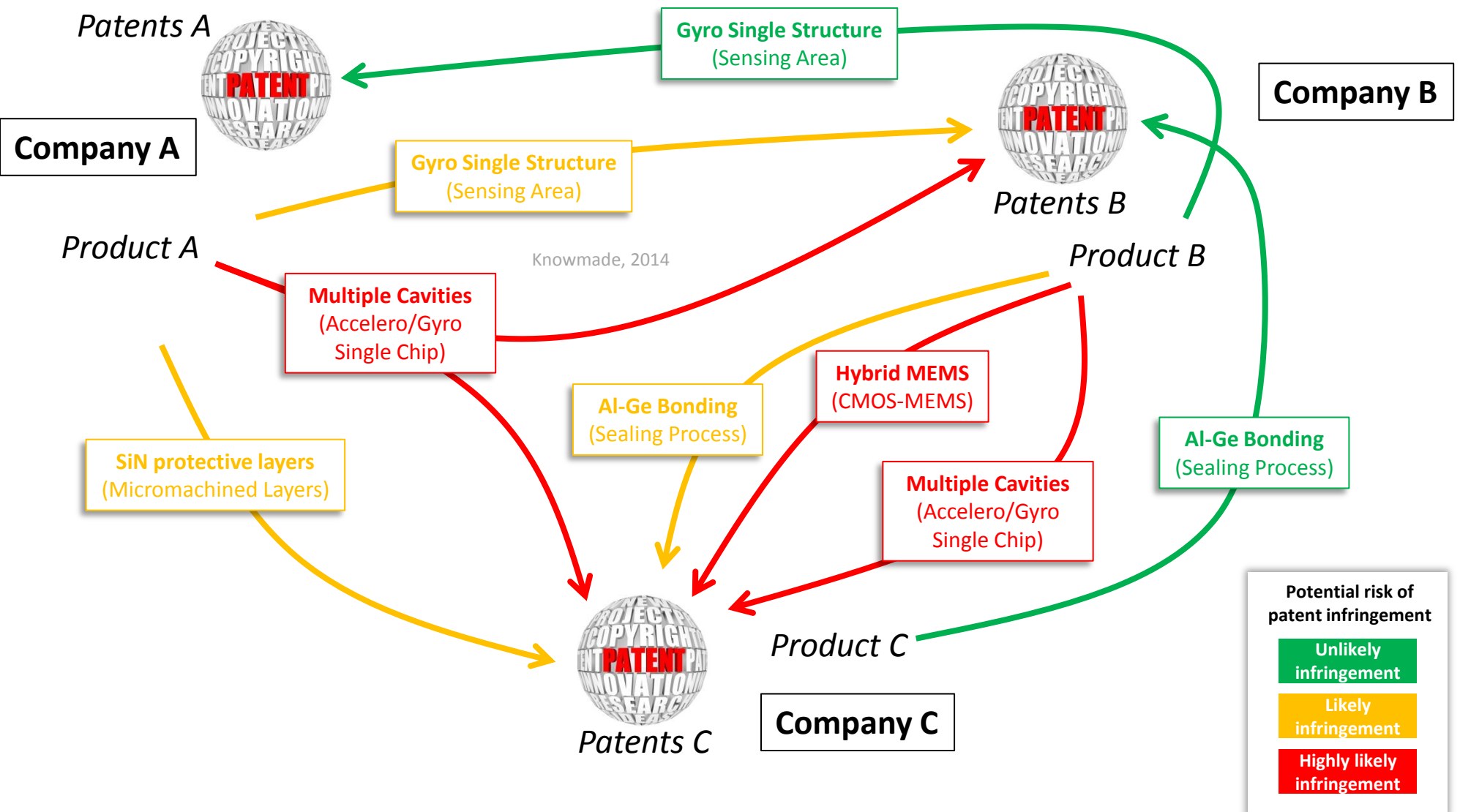
SAMPLE

Other players hold patents related to accelero/gyro [redacted] [redacted] which could be a threatening for the products of [redacted], [redacted] Microelectronics [redacted] [redacted]. An in-depth patent analysis should be required in order to assess the potential risks of patent infringement.



Summary of Patent Infringement Risks

SAMPLE



Excel Patent Database

with all patents analyzed in the report



More than 60 patent families composed of more than 200 patents.

This database allows multi-criteria searches and includes patent publication number, hyperlinks to the original documents, priority date, title, abstract, patent assignees, legal status for each member of the patent family.

Patent Number (Patent Database)	Publication Number	Publication Date	Kind	Publication Stage History	PDF	Mosaic	Biblio	Register	BIB	Title	Assignee	Abstract	Claims	Inventors	Applicant
	DE102012219511	2014-04-30	A1	(A1) Doc. laid open (First	Open	Open	Open	Open	Open	Micromechanical	ROBERT BOSCH	Micromechani	(Claim	SCHEBEN	2012-0
	CN103776437	2014-05-07	A	(A) Published application	Open	Open	Open	Open	Open	PC weapon	ROBERT BOSCH	Micromechani	(Claims		2013-0
	US20140116134	2014-05-01	A1	(A1) Application published	Open	Open	Open	Open	Open	Micromechanical	ROBERT BOSCH	Micromechani	What is	CLASSEN	2013-0
	DE102012219605	2014-04-30	A1	(A1) Doc. laid open (First	Open	Open	Open	Open	Open	Micromechanical	ROBERT BOSCH	A	(Claim	GONSKA	2012-0
	CN103787260	2014-05-14	A	(A) Published application	Open	Open	Open	Open	Open	微机械构件	ROBERT BOSCH	A	(Claims		2013-0
	US20140117472	2014-05-01	A1	(A1) Application published	Open	Open	Open	Open	Open	Micromechanical	ROBERT BOSCH	A	What is	GONSKA	2013-0
	US20140110800	2014-04-24	A1	(A1) Application published	Open	Open	Open	Open	Open	Method for	ROBERT BOSCH	A	What is	CLASSEN	2013-0
	DE102012219465	2014-04-24	A1	(A1) Doc. laid open (First	Open	Open	Open	Open	Open	Procedure for	ROBERT BOSCH	A	(Claim	CLASSEN	2012-0
	CN103771333	2014-05-07	A	(A) Published application	Open	Open	Open	Open	Open	For making cover	ROBERT BOSCH	A	(Claims		2013-0
	US20130233048	2013-09-12	A1	(A1) Application published	Open	Open	Open	Open	Open	Gyroscope self	INVENSENSE	A self-test	What we	ANAC OZAN	2013-0
	WO2009130554	2009-10-29	A2	(A2) International	Open	Open	Open	Open	Open	X-y axis dual-mass	INVENSENSE ([US])	An angular	CLAIMS	SEEGER	2009-0
	CN101939653	2011-01-05	A	(A) Published application	Open	Open	Open	Open	Open	X-y axis dual-mass	INVENSENSE	An angular	(Claims	JOSEPH	2009-0
	EP2238460	2010-10-13	A2	(A2) Application published	Open	Open	Open	Open	Open	X-y axis dual-mass	INVENSENSE ([US])		1. A sensor	SEEGER	2009-0
	JP2011525233	2011-09-15	A	(A) Published application	Open	Open	Open	Open	Open	The electronic	INVENSENSE	Questel		Seeger	2009-0
	US20130334622	2013-12-19	A1	(A1) Application published	Open	Open	Open	Open	Open	Micromechanical	ROBERT BOSCH	A	What is	GONSKA	2013-0
	DE102012209973	2013-12-19	A1	(A1) Doc. laid open (First	Open	Open	Open	Open	Open	Micromechanical	ROBERT BOSCH	A	(Claim	GONSKA	2012-0
	DE102012208032	2013-11-14	A1	(A1) Doc. laid open (First	Open	Open	Open	Open	Open	Hybrid integrated	ROBERT BOSCH	A hybrid	(Claim	CLASSEN	2012-0
	CN103420324	2013-12-04	A	(A) Published application	Open	Open	Open	Open	Open	Hybrid integrated	ROBERT BOSCH	The present	(Claims	CLASSEN	2013-0
	TW201402449	2014-01-16	A	(A) Laid open application for	Open	Open	Open	Open	Open	Hybrid	ROBERT BOSCH	A hybrid		CLASSEN	2013-0
	US20130307096	2013-11-21	A1	(A1) Application published	Open	Open	Open	Open	Open	Hybrid intergrated	ROBERT BOSCH	A hybrid	What is	CLASSEN	2013-0
	US8564076	2013-10-22	B1	(B1) Granted patent as first	Open	Open	Open	Open	Open	Internal electrical	INVENSENSE	A MEMS device	What is	HUANG	2013-0
	US20140213007	2014-07-31	A1	(A1) Application published	Open	Open	Open	Open	Open	Internal electrical	INVENSENSE ([US])	A method of		HUANG	2013-0
	CN103964366	2014-08-06	A	(A) Published application	Open	Open	Open	Open	Open	The internal	INVENSENSE	A MEMS device	(Claims		2014-0
	EP2762441	2014-08-06	A2	(A2) Application published	Open	Open	Open	Open	Open	Internal electrical	INVENSENSE ([US])	A MEMS device	1. A MEMS	HUANG	2014-0
	US20130277774	2013-10-24	A1	(A1) Application published	Open	Open	Open	Open	Open	Method for	ROBERT BOSCH	A simple and	What is	FREY JENS	2013-0
	DE102012206732	2013-10-24	A1	(A1) Doc. laid open (First	Open	Open	Open	Open	Open	Procedure for	ROBERT BOSCH	A simple and	(Claim	FREY JENS	2012-0
	CN103420325	2013-12-04	A	(A) Published application	Open	Open	Open	Open	Open	Method for	ROBERT BOSCH	The present	(Claims	FREY JENS;	2013-0
	TW201348122	2013-12-01	A	(A) Laid open application for	Open	Open	Open	Open	Open	Method for	ROBERT BOSCH	A simple and		FREY JENS	2013-0
	US8508039	2013-08-13	B1	(B1) Granted patent as first	Open	Open	Open	Open	Open	Wafer scale chip	INVENSENSE	In a method	What is	NASIRI	2008-0

Order Form

9-Axis MEMS IMU (STMicroelectronics, Bosch Sensortec, InvenSense) Technology and Patent Infringement Risk Analysis

SHIP TO

Name (Mr/Ms/Dr/Pr):

Job Title:

Company:

Address:

City:

State:

Postcode/Zip:

Country:

VAT ID Number for EU members:

Tel:

Email:

Date:

PAYMENT METHODS

Check

To pay your invoice using a check, please mail your check to the following address:

KnowMade S.A.R.L.

2405 route des Dolines, BP 65

06902 Valbonne Sophia Antipolis

FRANCE

Bank Transfer

To pay your invoice using a bank money wire transfer please contact your bank to complete this process. Here is the information that you will need to submit the payment:

Payee: KnowMade S.A.R.L.

Bank: Banque populaire St Laurent du Var CAP 3000 - Quartier du lac- 06700 St Laurent du Var

IBAN: FR76 1560 7000 6360 6214 5695 126

BIC/SWIFT: CCBPFRPPNCE

Paypal

In order to pay your invoice via PAYPAL, you must first register at www.paypal.com. Then you can send money to the KnowMade S.A.R.L. by entering our E-mail address contact@knowmade.fr as the recipient and entering the invoice amount.

RETURN ORDER BY

E-mail: contact@knowmade.fr

Mail: KnowMade S.A.R.L. 2405 route des Dolines, 06902 Sophia Antipolis, FRANCE

PRODUCT ORDER

☐ €5,990

☐ Bundle with Knowmade and/or System Plus
Consulting other related reports (contact us)

For price in dollars, please use the day's exchange rate.

For French customer, add 20% for VAT.

All reports are delivered electronically in pdf format at payment reception.

I hereby accept Knowmade's Terms and Conditions of Sale
Signature:

Terms and Conditions of Sales

Definitions

“Acceptance”: Action by which the Buyer accepts the terms and conditions of sale in their entirety. It is done by signing the purchase order which mentions “I hereby accept Knowmade’s Terms and Conditions of Sale”.

“Buyer”: Any business user (i.e. any person acting in the course of its business activities, for its business needs) entering into the following general conditions to the exclusion of consumers acting in their personal interests.

“Contracting Parties” or “Parties”: The Seller on the one hand and the Buyer on the other hand.

“Intellectual Property Rights” (“IPR”) means any rights held by the Seller in its Products, including any patents, trademarks, registered models, designs, copyrights, inventions, commercial secrets and know-how, technical information, company or trading names and any other intellectual property rights or similar in any part of the world, notwithstanding the fact that they have been registered or not and including any pending registration of one of the above mentioned rights.

“License”: For the reports and databases, 2 different licenses are proposed. The buyer has to choose one license:

1. One user license: a single individual at the company can use the report.
2. Multi user license: the report can be used by unlimited users within the company. Subsidiaries are not included.

“Products”: Reports are established in PowerPoint and delivered on a PDF format and the database may include Excel files.

“Seller”: Based in Sophia Antipolis (France headquarters), Knowmade is a technology intelligence company specialized in the research and analysis of scientific and technical information. We provide patent landscapes and scientific state of the art with high added value to businesses and research laboratories. Our intelligence digests play a key role to define your innovation and development strategy.

1. Scope

1.1 The Contracting Parties undertake to observe the following general conditions when agreed by the Buyer and the Seller. ANY ADDITIONAL, DIFFERENT, OR CONFLICTING TERMS AND CONDITIONS IN ANY OTHER DOCUMENTS ISSUED BY THE BUYER AT ANY TIME ARE HEREBY OBJECTED TO BY THE SELLER, SHALL BE WHOLLY INAPPLICABLE TO ANY SALE MADE HEREUNDER AND SHALL NOT BE BINDING IN ANY WAY ON THE SELLER.

1.2 This agreement becomes valid and enforceable between the Contracting Parties after clear and non-equivocal consent by any duly authorized person representing the Buyer. For these purposes, the Buyer accepts these conditions of sales when signing the purchase order which mentions “I hereby accept Knowmade’s Terms and Conditions of Sale”. This results in acceptance by the Buyer.

1.3 Orders are deemed to be accepted only upon written acceptance and confirmation by the Seller, within [7 days] from the date of order, to be sent either by email or to the Buyer’s address. In the absence of any confirmation in writing, orders shall be deemed to have been accepted.

2. Mailing of the Products

2.1 Products are sent by email to the Buyer:

- within [1] month from the order for Products already released; or
- within a reasonable time for Products ordered prior to their effective release. In this case, the Seller shall use its best endeavours to inform the Buyer of an indicative release date and the evolution of the work in progress.

2.2 Some weeks prior to the release date the Seller can propose a pre-release discount to the Buyer.

The Seller shall by no means be responsible for any delay in respect of article 2.2 above, and including in cases where a new event or access to new contradictory information would require for the analyst extra time to compute or compare the data in order to enable the Seller to deliver a high quality Products.

2.3 The mailing of the Product will occur only upon payment by the Buyer, in accordance with the conditions contained in article 3.

2.4 The mailing is operated through electronic means either by email via the sales department. If the Product’s electronic delivery format is defective, the Seller undertakes to replace it at no charge to the Buyer provided that it is informed of the defective formatting within 90 days from the date of the original download or receipt of the Product.

2.5 The person receiving the Products on behalf of the Buyer shall immediately verify the quality of the Products and their conformity to the order. Any claim for apparent defects or for non-conformity shall be sent in writing to the Seller within 8 days of receipt of the Products. For this purpose, the Buyer agrees to produce sufficient evidence of such defects.

2.6 No return of Products shall be accepted without prior information to the Seller, even in case of delayed delivery. Any Product returned to the Seller without providing prior information to the Seller as required under article 2.5 shall remain at the Buyer’s risk.

Terms and Conditions of Sales

3. Price, invoicing and payment

3.1 Prices are given in the orders corresponding to each Product sold on a unit basis or corresponding to annual subscriptions. They are expressed to be inclusive of all taxes. The prices may be reevaluated from time to time. The effective price is deemed to be the one applicable at the time of the order.

3.2 Payments due by the Buyer shall be sent by cheque payable to Knowmade, PayPal or by electronic transfer to the following account:

Banque populaire St Laurent du Var CAP 3000 - Quartier du lac- 06700 St Laurent du Var

BIC or SWIFT code: CCBPFRPPNCE

IBAN: : FR76 1560 7000 6360 6214 5695 126

To ensure the payments, the Seller reserves the right to request down payments from the Buyer. In this case, the need of down payments will be mentioned on the order.

3.3 Payment is due by the Buyer to the Seller within 30 days from invoice date, except in the case of a particular written agreement. If the Buyer fails to pay within this time and fails to contact the Seller, the latter shall be entitled to invoice interest in arrears based on the annual rate Refi of the «BCE» + 7 points, in accordance with article L. 441-6 of the French Commercial Code. Our publications (report, database, tool...) are delivered only after reception of the payment.

3.4 In the event of termination of the contract, or of misconduct, during the contract, the Seller will have the right to invoice at the stage in progress, and to take legal action for damages.

4. Liabilities

4.1 The Buyer or any other individual or legal person acting on its behalf, being a business user buying the Products for its business activities, shall be solely responsible for choosing the Products and for the use and interpretations he makes of the documents it purchases, of the results he obtains, and of the advice and acts it deduces thereof.

4.2 The Seller shall only be liable for (i) direct and (ii) foreseeable pecuniary loss, caused by the Products or arising from a material breach of this agreement

4.3 In no event shall the Seller be liable for:

a) damages of any kind, including without limitation, incidental or consequential damages (including, but not limited to, damages for loss of profits, business interruption and loss of programs or information) arising out of the use of or inability to use the Seller's website or the Products, or any information provided on the website, or in the Products;

b) any claim attributable to errors, omissions or other inaccuracies in the Product or interpretations thereof.

4.4 All the information contained in the Products has been obtained from sources believed to be reliable. The Seller does not warrant the accuracy, completeness adequacy or reliability of such information, which cannot be guaranteed to be free from errors.

4.5 All the Products that the Seller sells may, upon prior notice to the Buyer from time to time be modified by or substituted with similar Products meeting the needs of the Buyer. This modification shall not lead to the liability of the Seller, provided that the Seller ensures the substituted Product is similar to the Product initially ordered.

4.6 In the case where, after inspection, it is acknowledged that the Products contain defects, the Seller undertakes to replace the defective products as far as the supplies allow and without indemnities or compensation of any kind for labor costs, delays, loss caused or any other reason. The replacement is guaranteed for a maximum of two months starting from the delivery date. Any replacement is excluded for any event as set out in article 5 below.

4.7 The deadlines that the Seller is asked to state for the mailing of the Products are given for information only and are not guaranteed. If such deadlines are not met, it shall not lead to any damages or cancellation of the orders, except for non-acceptable delays exceeding [4] months from the stated deadline, without information from the Seller. In such case only, the Buyer shall be entitled to ask for a reimbursement of its first down payment to the exclusion of any further damages.

4.8 The Seller does not make any warranties, express or implied, including, without limitation, those of saleability and fitness for a particular purpose, with respect to the Products. Although the Seller shall take reasonable steps to screen Products for infection of viruses, worms, Trojan horses or other codes containing contaminating or destructive properties before making the Products available, the Seller cannot guarantee that any Product will be free from infection.

5. Force majeure

The Seller shall not be liable for any delay in performance directly or indirectly caused by or resulting from acts of nature, fire, flood, accident, riot, war, government intervention, embargoes, strikes, labor difficulties, equipment failure, late deliveries by suppliers or other difficulties which are beyond the control, and not the fault of the Seller.

Terms and Conditions of Sales

6. Protection of the Seller's IPR

6.1 All the IPR attached to the Products are and remain the property of the Seller and are protected under French and international copyright law and conventions.

6.2 The Buyer agreed not to disclose, copy, reproduce, redistribute, resell or publish the Product, or any part of it to any other party other than employees of its company. The Buyer shall have the right to use the Products solely for its own internal information purposes. In particular, the Buyer shall therefore not use the Product for purposes such as:

- Information storage and retrieval systems;
- Recordings and re-transmittals over any network (including any local area network);
- use in any timesharing, service bureau, bulletin board or similar arrangement or public display;
- Posting any Product to any other online service (including bulletin boards or the Internet);
- Licensing, leasing, selling, offering for sale or assigning the Product.

6.3 The Buyer shall be solely responsible towards the Seller of all infringements of this obligation, whether this infringement comes from its employees or any person to whom the Buyer has sent the Products and shall personally take care of any related proceedings, and the Buyer shall bear related financial consequences in their entirety.

6.4 The Buyer shall define within its company point of contact for the needs of the contract. This person will be the recipient of each new report in PDF format. This person shall also be responsible for respect of the copyrights and will guaranty that the Products are not disseminated out of the company.

7. Termination

7.1 If the Buyer cancels the order in whole or in part or postpones the date of mailing, the Buyer shall indemnify the Seller for the entire costs that have been incurred as at the date of notification by the Buyer of such delay or cancellation. This may also apply for any other direct or indirect consequential loss that may be borne by the Seller, following this decision.

7.2 In the event of breach by one Party under these conditions or the order, the non-breaching Party may send a notification to the other by recorded delivery letter upon which, after a period of thirty (30) days without solving the problem, the non-breaching Party shall be entitled to terminate all the pending orders, without being liable for any compensation.

8. Miscellaneous

All the provisions of these Terms and Conditions are for the benefit of the Seller itself, but also for its licensors, employees and agents. Each of them is entitled to assert and enforce those provisions against the Buyer.

Any notices under these Terms and Conditions shall be given in writing. They shall be effective upon receipt by the other Party.

The Seller may, from time to time, update these Terms and Conditions and the Buyer, is deemed to have accepted the latest version of these terms and conditions, provided they have been communicated to him in due time.

9. Governing law and jurisdiction

9.1 Any dispute arising out or linked to these Terms and Conditions or to any contract (orders) entered into in application of these Terms and Conditions shall be settled by the French Commercial Courts of Grasse, which shall have exclusive jurisdiction upon such issues.

9.2 French law shall govern the relation between the Buyer and the Seller, in accordance with these Terms and Conditions.