MICROBATTERY
Patent Landscape Analysis

September 2016

KnowMade
IP and Technology Intelligence

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- Mapping of Key Players for Battery Technologies and Designs
- Mapping of Key Players for Battery Components
- Mapping of Key Players for Types of claims and Process methods
- Matrix Main Patent Assignees vs. Technical Segments

### Focus on key segments:
- Type of claimed invention
- Battery technologies
- Battery designs
- Battery components (electrodes, electrolytes, barrier layers, packaging, non-active parts)
- Process methods (sputtering, evaporation, CVD, PVD, ALD, spraying, printing electrodeposition …)
  - Apparatus

### For each segment:
- Main patent assignees
- Time evolution of patent applications
- Technology evolution
- Most cited patents

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Summary of patent portfolios of main assignees
- IP competitors dependency by citations
- Most cited patents
- Granted patents near expiration date
- IP specialization degree of key players
- IP leadership of key players
- Prior art strength index of key players
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## PATENT LITIGATION 58

## IP PROFILE OF KEY PLAYERS 60
- Cymbet
- PolyPlus Battery
- Panasonic
- Infinite Power Solutions
- Front Edge Technology
- CEA
- Johnson Battery Technologies
- I-TEN
- Applied Materials
- ST Microelectronics

### For each player:
- Company presentation
- Summary of the patent portfolio
- Key patents

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We Know Technology, We Know Patents
INTRODUCTION
INTRODUCTION
Scope of the Report

• This report provides a detailed picture of the patent landscape for Microbattery Technologies (micro-batteries and solid thin film batteries).
• This report covers patents published worldwide up to May 2016.
• We have selected and analyzed more than 3,000 patents and patent applications (900+ patent families) relevant to the scope of this report.

Included in the report
• Patents related to micro-batteries and solid thin film batteries.

Micro-scaled in at least one dimension

Not included in the report
• Patents mentioning micro-battery or solid thin film battery as a part of a device without describing its manufacture.
• Patents on electrodes or electrolytes in which their specific use in micro-batteries or solid thin film batteries is not described.
• Patents related to thin film batteries with liquid electrolytes and solid batteries without 3D or thin film electrodes and a thin layer of electrolyte.
INTRODUCTION
Key Features of the Report (1/2)

• The report provides essential patent data for Micro-Batteries and Solid Thin Film Batteries.

• It identifies more than 20 major patent holders and it provides in-depth IP analysis of key technical segment and key players including:
  – Time evolution of patent publications and countries of patent filings.
  – Current legal status of patents.
  – Ranking of main patent applicants.
  – Joint developments and IP collaboration network of main patent applicants.
  – Key patents.
  – Granted patents near expiration.
  – Relative strength of main companies IP portfolio.
  – Matrix applicants/technology issues for more than 20 companies.

• The Micro-batteries IP profile of 10 major companies is presented, including key patents, recent patented technologies, technological issues, partnerships, last market news.
INTRODUCTION
Key Features of the Report (2/2)

• The report provides an extensive **Excel database** with all patents analyzed in the report.
  
  **This useful patent database allows multi-criteria searches:**
  
  - Patent publication number
  - Hyperlinks to the original documents
  - Priority date
  - Title
  - Abstract
  - Patent Assignees
  - Segmentation
  - Legal status for each member of the patent family

• **This report does not provide any insight analyses or counsel regarding legal aspects or the validity of any individual patent.** Knowmade is a research firm that provides technical analysis and technical opinions. Knowmade is not a law firm. The research, technical analysis and/or work proposed or provided by Knowmade and contained herein is not a legal opinion and should not be construed as such.
INTRODUCTION
Objectives of the Report

Objectives of this patent landscape is to:

✓ Understand the IP landscape for Micro-batteries.
✓ Identify key patents.
✓ Understand trends in Micro-batteries IP and future technological choices.
✓ Identify the major IP players in Micro-batteries and the relative strength of their patent portfolio.
✓ Identify newcomers in Micro-batteries.
✓ Identify IP collaboration networks between key players.
✓ Identify main patent litigations.
METHODOLOGY
METHODOLOGY

• The data were extracted from the FamPat worldwide database (Questel-ORBIT) which provides 80+ million patent documents from 95 offices.

• The search for patent was performed in May 2016 hence patents published after this date will not be available in this report.

• The patents were grouped by patent family. A patent family is a set of patents filed in multiple countries to protect a single invention by a common inventor(s). A first application is made in one country – the priority country – and is then extended to other countries.

• The selection of the patents has been done both automatically and manually (all details in next slides).

Number of selected patent families for the Micro-batteries IP Investigation:
912 over a number of returned results > 6,600

• The statistical analysis was performed with Orbit IP Business Intelligence web based patent analysis software from Questel.

• The patents were manually categorized in technical segments using keyword analysis of patent title, abstract and claims, in conjunction with expert review of the subject-matter of inventions (all details in next slides).

• For legal status of European (EP) and PCT (WO) patent applications, EPO Register Plus has been used. For legal status of US patents, USPTO PAIR has been used. For legal status of other patents, information have been gotten from their respective national registers.
METHODOLOGY

Phase I
- Keywords and term-set definition
- Search equations / Search strategy

Phase II
- Manual screening of the results
- Patent classification
  - Relevant
  - Non relevant
  - Refine search using IPC classes and citations analysis

Phase III
- Patent Segmentation
- Landscape Overview
- In-depth analysis of Key Technology Segments and Key Players
- Patent Ranking and Key Patents analysis
  - Segmentation improved during patent analysis
**METHODOLOGY**

**Patent Segmentation**

For each segment, the numbers represent the numbers of patent families. Note that a patent can be found in several categories.

- **Battery designs**
  - Micro-batteries
  - Flexible batteries
  - Thin Film batteries
  - Other battery designs
  - 3D batteries
    - Stacked in the same packaging
    - Multi-layers
    - 3D-electrodes or substrate

- **Types of claims**
  - Pure products
  - Method and products by method
  - Apparatus

- **Battery Technologies**
  - Primary Lithium batteries
  - Secondary Lithium batteries
  - Primary Non-Lithium batteries
  - Secondary Non-Lithium batteries

- **Processes methods**
  - CVD_Chemical Vapour Deposition
  - ALD.Atomic Vapour Deposition
  - PVD_Physical Vapour Deposition
  - Sputtering
  - Evaporation
  - Electrodeposition
  - Electrophoresis
  - Sol-gel
  - Print
  - Spray

- **Battery components**
  - **Electrodes**
    - Anode
      - Li metal
      - Silicon or Germanium
      - Carbon
      - Oxides for anodes
    - Cathode
      - LiCoO$_2$
      - LiTiO$_3$
      - Oxides materials for cathodes
      - LiFePO$_4$
      - TiS$_2$

  - **Electrolytes**
    - Solid electrolytes
      - Li$_3$N
      - LiPON
      - LixPO$_y$
    - Polymer or gelled electrolytes
    - Other electrolytes

  - **Non-active parts**
    - Barrier Layers
    - Packaging

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NOTEWORTHY NEWS

- **2016**, I-TEN raised 10M€ from Innovacom Gestion, Demeter Partners and Rhone-Alpes Creation Viveris Venture. The company raised 3.2M€ in 2014.

- **2016**, Cymbet Corporation announced that it has completed a recapitalization and restructuring of the company in connection with a $10 million-plus equity investment led by Dallas, TX-based Island Shore Investments (ISI). This significant investment and restructuring will fund the production and introduction of new products and provide additional working capital to expand Cymbet’s business in key markets. The announced financing is the first part of a two-part funding round, the second portion totalling $5-7 million, which is to be completed in the first half of 2016.

- **2016**, CEA-LETI joined the Stanford System X Alliance and signed a new agreement with Intel to develop microelectronic components.

- **2016**, Philips announced that it will commercialise 5 connected devices for health applications.

- **2016**, STMicroelectronics acquired assets on RFID and NFC from AMS group.

- **2016**, Fraunhofer IZM opens a new microbattery prototype fabrication line based on precision screen-printing. Current developments at the Fraunhofer IZM reach a minimum size of 2 x 2 mm² with a diameter of only 2 mm and a thickness of 200 μm.


- **2015**, a patent on “Contact lenses with hybrid power sources” filed by Google was published (WO2015137937).
PATENT LANDSCAPE OVERVIEW
Microbatteries IP Dynamics
900+ patent families comprising 3,000+ patents published over the last past 50 years

Note: The data corresponding to the year 2016 is not complete since the patent search was done in May 2016.
• GS Nanotech is part of GS Energy since 2012. GS Energy Corporation is a Korea-based company founded in 2012 to gather technological subsidiaries of GS Holding.
• Johnson Battery Technologies was spun-off from Excellatron Solid State in 2011. Excellatron Solid State, Johnson R&D and Johnson Battery Technologies, all belonging to Dr Lonnie Johnson have been gathered under the name “Johnson Battery Technologies”.

Oak Ridge National Laboratories (ORNL) on the electrolyte Lithium Phosphorus Oxynitride (LIPOON). ORNL was purchased and absorbed by Apple in 2013.
• These companies have been acquired by Dyson in 2015.
**PATENT LANDSCAPE OVERVIEW**

Time Evolution of Patent Assignees

For each year, the numbers represent the numbers of patent families.

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<th>No. of Patent Families</th>
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Note: The data corresponding to the year 2014, 2015 and 2016 may not be complete since most patents filed during these years are not published yet.
## PATENT LANDSCAPE OVERVIEW

Countries of Patent Filing for Main Patent Assignees

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</table>

Countries are defined by the country code from the patent numbers. The number represents the number of published patent families. Note that PCT (Wo) and European (EP) applications may hide other countries that are not published.

**Non-profit organizations**

CEA has a contrary to Infinite Power Solutions and CNRS its origins.

**Equipment suppliers and component makers**

They mainly file patents which files its patents in countries. The companies become one of the battery factories equity.

**Pure play microbattery companies**

Infinite Power Solutions, Cymbet, and Front Edge Battery Technology seem to be the leaders in this space.
**PATENT LANDSCAPE OVERVIEW**

Mapping of Main Current Patent Holders

| Number of patent families* containing granted patents in the corresponding country. |

* A patent family is a set of patents filed in multiple countries by a common inventor(s) to protect a single invention.

- **USA**: 484 patent families
- **Japan**: 442 patent families
- **China**: 307 patent families
- **Korea**: 269 patent families
- **Europe**: 260 patent families
- **Taiwan**: 62 patent families

*Panasonic*: 6 patent families

*Samsung*: 4 patent families

*Sony*: 8 patent families

*Cymbet*: 7 patent families

*CEA*: 9 patent families

*Hongfujin Precision Industry*: 4 patent families

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# Patent Landscape Overview

## Patent Portfolio Summary of Main Patent Assignees

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<th>Patent Applicants</th>
<th>No. of patent families</th>
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<th>Earliest publication year</th>
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# PATENT LANDSCAPE OVERVIEW

## Most Cited Granted Patents

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* Expected Expiration Date is dependent on the accuracy and timeliness of the information provided by the patent offices. This indicator may change at any time without notice based on new information received from the patent offices. No decision should be made solely on this indicator.
**PATENT LANDSCAPE OVERVIEW**

Main Assignees IP Leadership

- **Company A** is leading the IP landscape with 100+ granted patents and 100+ pending patent applications, Its patents are mainly related to new materials for energy storage and power electronics in microbatteries systems.

- **Company D**, **Company B** and **Company C** are IP challengers with numerous pending patent applications all over the world. **Company D** filed patents on microbatteries, manufacturing methods and equipment and materials, while **Company C** patents are mainly focused on process methods and materials.

- **Company E**, **Company F** and **Company G** have noticeable number of enforceable patents, however, have currently a lower amount of patents in pre-grant stage compared to **Company D**, **Company B** and **Company C**. **Company E** has key patents XXX. Some of them will expire in 2018. The company moves their R&D efforts to lithium-ion and lithium-sulfur batteries.
PATENT LANDSCAPE OVERVIEW
Main Assignees IP Blocking potential

- **Company A** and **Company B**, whose patent portfolios have the strongest strength index for prior art contribution, distinguish themselves with the highest IP blocking potential. Their patents relating to Microbattery received a lot of forward citations from a lot of different patent applicants. That means they have the capacity to hamper the other firms’ attempts to patent related inventions. Note that **Company A** and **Company B** hold respectively at least XXX granted patents in USA, Europe, China and XXX granted patents in China.

- Even if the **Company C** has a large Microbattery patent portfolio after patents enforcement, it does not show a high IP blocking potential.

- **Company D**, one of the current IP challengers, has a small IP blocking potential because the company started to file patents in XXXX.

- **Company E**, a pure play microbattery company, started its patenting activity in XXXX. Its patents are related to micro-batteries made by incorporating lithium. The company's patents are mainly related to this field. The company later on also patented new materials in this field.

Note: This graph is at patent family level. The identification of a “blocking patent” requires an in-depth specific analysis of each patent documents composing the patent families.
IP PROFILE OF KEY PLAYERS
CEA (French Alternative Energies and Atomic Energy Commission)

Company Profile

• The French Alternative Energies and Atomic Energy Commission or CEA, is a French public government-funded research organization in the areas of defense and security, information technologies and health technologies. It maintains a cross-disciplinary culture of engineers and researchers, building synergies between fundamental and technological research. It is divided into 5 divisions: Nuclear energy (DEN), Technological research (DRT), Life sciences (DSV), Sciences of matter (DSM) and Military applications (DAM). Research on micro-batteries in CEA is now performed in LETI, the CEA institute specialized in micro-electronic devices. CEA has created more than 150 start-ups in about 20 years, such as SOITEC, Alchimer (renamed Aveni), Crocus Technology, Tronics, ISORG, Microoled, Movea, Enerbee, EnWires ...

• CEA doesn’t commercialize products but it produces prototypes. It focuses on R&D for micro-batteries (materials, process methods...). It has a special process platform to product prototypes in condition near from the one of production. This platform is composed of about 30 manufacturing devices, including PVD-CVD apparatus. CEA-LETI has a partnership with ST Microelectronics to develop their micro-batteries pilot line in Tours. In 2016, CEA-LETI joined the Stanford System X Alliance and signed a new agreement with Intel to develop microelectronic components.

• Large scale and miniaturized fuel cells, scale Li-ion batteries and new batteries technologies, such as Na-ion battery, all organic battery, Li-Air battery or Li-S battery, printed electronic, photovoltaic devices ... are also developed in CEA in LITEN, CEA’s institute specialized in energy storage and collecting devices.
CEA (French Alternative Energies and Atomic Energy Commission)

Patent Portfolio Summary

- Large Portfolio
- 2001 Oldest priority date
- 6.9 Patent family average age
- Patent families
- Granted patents
- Pending applications
- 7 Dead Patent families

- High Portfolio Strength
- Medium IP Blocking Potential
- High Leadership

- Lithium batteries
- Products by methods
- Process
- Thin Film
- Electrodes
- Micro-batteries
- 3D
- Packaging
- Electrolytes

- Patent families comprising granted patents
- Patent families comprising pending patents

- USA
- Korea
- Europe
- China
- Taiwan
- Japan
# CEA (French Alternative Energies and Atomic Energy Commission)

## Key Patents

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**FIG.2A**

**JP101011**

**Microbattery - Patent Landscape Analysis | September 2016**

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PATENT SEGMENTATION
PATENT SEGMENTATION
Mapping of Key Players for Battery Technologies and Designs

Battery Technologies

Lithium Batteries
- Panasonic
- SUMITOMO ELECTRIC
- PHILIPS
- ULVAC
- APTek
- GS Energie
- Infineon
- InfraEra
- RAVN
- Visum Technologies
- NIPpon Sirius
- NGK Insulators

Non-Lithium Batteries

Microbattery patents

Battery Designs

Flexible batteries
- Cymbet Corporation

Thin Film batteries
- Front Edge Technology Inc.

Micro-batteries
- Panasonic

Other battery designs
- CEA

3D batteries
- Philips

Multi-layers

Stacked in the same package
- Philips

3D-electrodes or substrate
- Philips

NXP

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PATENT SEGMENTATION
Mapping of Key Players for Battery Components

Cathode materials
- TiS₂
- Oxides materials for cathodes
- LiCoO₂
- LiTiOS
- LiFePO₄

Non-Active parts

Packaging

Anode materials
- Li metal
- Carbon
- Silicon or Germanium
- Oxides materials for anodes

Electrolyte materials
- Solid Electrolytes
- Li₃N
- Li₃PO₄
- LIPON

Polymer or gelled Electrolytes
- SONY

Other Electrolytes
- PHILIPS

Barrier layer

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Matrix Main Patent Assignees v.s. Technical Segments

For each segment, the numbers represent the numbers of patent families.

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<th>Patent assignees</th>
<th>Battery technologies</th>
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<th>Types of claims</th>
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Battery Technologies
BATTERY TECHNOLOGIES

Principle of a Lithium Battery

- **Lithium battery** is operating thanks to the electrochemical couple Li⁺/Li.
  
  **Anode** material is either in Lithium metal or materials which can reversibly intercalate or form an alloy with Lithium.
  
  **Cathode** material can reversibly liberate Lithium ion.

- During the **charge**, cathode material is oxidized and liberates Lithium ions which move to the anode through the electrolyte and electrochemically react with the anode material via a reduction reaction. Depending on the anode material, Lithium ions are intercalated into the anode material or form an alloy with it.

- During the **discharge**, the opposite process occurs. Anode material, which contains Lithium, is oxidized. Lithium ions are liberated, move through the electrolyte and electrochemically react with the cathode material via a reduction reaction.

- Examples of reduction and oxidation reactions associated to the charge and discharge of a Lithium battery are presented below.

**Example for Li/LiCoO₂**

**Charge**
- Anode: Li⁺ + e⁻ → Li
- Cathode: LiCoO₂ → CoO₂ + Li⁺ + e⁻

**Discharge**
- Anode: Li → Li⁺ + e⁻
- Cathode: CoO₂ + Li⁺ + e⁻ → LiCoO₂

**Example for M/LiCoO₂**

M is a material which can insert or form an alloy with Li

**Charge**
- Anode: Li⁺ + e⁻ → <LiM>
- Cathode: LiCoO₂ → CoO₂ + Li⁺ + e⁻

**Discharge**
- Anode: <LiM> → Li⁺ + e⁻ + <M>
- Cathode: CoO₂ + Li⁺ + e⁻ → LiCoO₂
**BATTERY TECHNOLOGIES**

**Patents Split by Type of Technology**

No of patent families by type of battery technologies

- The segment «Primary and Secondary Battery» stands for patent families referring to both primary and secondary batteries.

- In the segment «Non-Lithium Battery», there are XX patent families with unspecified battery technology (XX patent families for secondary battery, XX patent families for secondary and primary batteries and XX patent families for primary batteries).

- Primary non-Lithium batteries are mainly XX batteries. Primary and Secondary non-Lithium batteries are mainly XX batteries. Secondary non-Lithium batteries are mainly XX Batteries.

- This Ragone plot represents the specific energy and power for several batteries technologies. It stands for all battery sizes. The specific energy is linked to the maximal duration of the discharge (i.e. the autonomy) and the specific power to the amount of energy which can be delivered in a short time.

- It can be noticed that Lithium batteries covers the larger range of Specific Energy and Power density. For power density higher than 10W/kg, Lithium batteries have higher energy density than other battery technologies, i.e. the best theoretical autonomy. It explains why Lithium Batteries are the main battery technology patented in microbattery field.

**Specific Energy Density, W/kg**

**Specific Power Density, W/kg**

Source: Saft
Battery Designs
BATTERY DESIGNS

Search Equations

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Note that a patent family can belong to several categories.

**Battery designs:**
- **Micro-batteries**: Batteries have a micro-scale size. The term “micro-battery” or “microbattery” is clearly mentioned in the title, abstract or claims of the patent.
- **Flexible Batteries**: Batteries are flexible. The term “Flexible” is clearly mentioned in the title, abstract or claims.
- **Thin film Batteries**: Batteries electrodes and solid electrolyte layer are thin films. The term “Thin Film” is clearly mentioned in the title, abstract or claims.
- **3D-Batteries**: Batteries are built in three dimensions: Batteries stacked in the same package, multi-layers battery and battery built with 3D electrodes or substrates. Examples of 3D-batteries are shown on the next page. Terms associated to “three dimensions” are clearly mentioned in the title, abstract or claims.
- **Other battery designs**: It gathers patent families which don’t mention the battery design and those which are not in the segments « micro-batteries », « flexible batteries », « thin film batteries » and « 3D-batteries ».
**BATTERY DESIGNS**

Examples for 3D-batteries Sub-segments

**Batteries stacked in the same packaging**

**Included**

Micro or thin film batteries are stacked and encapsulated in the same packaging.

**Not included**

Micro or thin film batteries are encapsulated independently and stacked afterwards.

**Multi-layers batteries**

**Included**

Several layers of anodes/electrolytes/cathodes are pile-up.

**Not included**

There is only one layer of anode, electrolyte and cathode materials.

**3D electrodes or substrates**

**Included**

Electrodes or substrates are structured in 3 Dimensions.
BATTERY DESIGNS

Evolution of the Design for 3D–Electrodes/Substrates (2/3)
**Excel Database**

with all patents analyzed in the report with technology segmentation

This database allows multi-criteria searches and includes patent publication number, hyperlinks to the original documents, priority date, title, abstract, patent assignees, technological segments and legal status for each member of the patent family.
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Microbattery Patent Landscape Analysis
September 2016

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2.3 The mailing of the Products will occur only upon payment by the Buyer, in accordance with the conditions contained in article 3.2.

2.4 The mailing is operated through electronic means either by email via the sales department. If the Products is not currently online, or if the electronic format is defective, the Seller undertakes to replace it at no charge to the Buyer provided it is informative 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 Seller 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.

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 at the discretion of the Seller.

3.2 Payments due by the Buyer shall be made by cheque payable to Knowmade, PayPal or by electronic transfer in the currency chosen during the order.

Bank unpopular St Laurent du Var CAP 3000 - Quartier du lac: 0670 St Laurent du Var BIC or SWIFT code: CCBPPFPNCE.

IBAN: FR76 5560 0001 0150 6214 4695 126

To ensure the payments, the Seller reserves the right to deduct payments from the Buyer. In this case, the buyer shall be informed of the amount to be deducted from his account.

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 Seller reserves the right to deduct the amounts not paid based on the annual rate Ref of the «ECE» + 7 points, in accordance with article L. 441-6 of the French Commercial Code. Our publications (report, database, tool...) are delivered only electronically.

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

Compensation 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 interpretation 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 any event a maximum in this case.

4.3 In no event shall the Seller be liable for (i) the consequences: total, partial, 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 or inability to use the Seller’s website or the Products, or any information provided on the website, or in the event of non-availability of the Seller’s website or the Products; or (ii) any claim attributable to errors, omissions or inaccuracies in the Product or interpretations thereof by the Buyer.

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 is subject to change.

4.5 All the Products that the Seller sells may, upon prior notice to the Buyer from time to time be modified as defined in the context of 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 as 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 or any other reason. The replacement is governed for a maximum of two months starting from the delivery date. Any replacement is excluded for modifications of the Products.

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 contract and the Buyer agrees to accept this fact in advance and shall not base the cancellation of the contract on this ground.

4.8 The Seller undertakes to give information on the Products in the form and extent requested by the Buyer. In such case only, the Buyer shall be entitled to ask for a reimbursement of its first down payment and/or the exclusion of any further damages.

4.9 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 that have the ability to ranges the confidentiality of the Products 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, civil disturbances, difficulties, equipment failure, late deliveries by suppliers or other difficulties which are beyond the control of the Seller.

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 agrees not to disclose, copy, reproduce, 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 Product solely for its internal and private information purposes.

6.3 The Buyer shall therefore use the Product for purposes such as:

- Information storage and retrieval systems;
- Recordings and transmissions over any network (including any local area network);
- Use in any timesharing, service bureau, bulletin board or similar arrangement or public display;
- Dissemination of information in the form of databases, networks or the Internet;
- Licensing, leasing, selling, offering for sale or assigning the Product.

6.4 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 Product and shall personally take care of any related proceedings, and the Buyer shall bear related financial consequences in their entirety.

6.5 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 respecting the copyrights and will guarantee 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 and postpones the date of mailing, the Buyer shall be deemed to have fraudulent behavior and the Seller, in addition to the cancellation of the order, may suspend or cancel the agreement and deny any further order from the Buyer.

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 employees and agents. Each of them is entitled to assert and enforce those provisions against the Buyer.

Any disputes under these Terms and Conditions shall be decided 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 of or related to these Terms and Conditions or to any contract (orders) entered into by the Buyer, including the interpretation and enforcement of these Terms and Conditions, shall which have exclusive jurisdiction upon such issues.

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