

The logo for 'ilika' features the word in a bold, blue, sans-serif font. The letters 'i' and 'l' are tall and narrow, while 'i' and 'k' are shorter and wider. The 'a' is a rounded, lowercase letter. Two small, light green triangles are positioned above the first 'i' and the second 'i', pointing towards the right.

accelerated materials innovation

# Disclaimer



The materials being provided to you in connection with this presentation are strictly confidential and intended only for informational purposes and convenient reference.

This document has been prepared by Ilika plc ("Ilika") and is the responsibility of the same and comprises the written materials for a presentation to investors concerning Ilika.

This information is not intended to provide, and should not be relied upon, for accounting, legal, tax advice or investment recommendations. You should consult your tax, legal, accounting or other professional advisors about the issues discussed herein. The descriptions contained herein are summaries and are not intended to be complete and neither Ilika nor any of its subsidiaries or affiliates undertakes any obligation to update or correct any errors or inaccuracies in any of the information presented herein. The information in these materials and any other information discussed at the presentation is subject to change.

These materials do not constitute or form part of any offer or invitation to sell or issue or any solicitation of any offer to purchase or subscribe for any securities of Ilika in any jurisdiction, nor shall it (or any part of it) or the fact of its distribution form the basis of, or be relied upon in connection with, or act as any inducement to enter into, any contract or investment decision in relation thereto.

The distribution of these materials in jurisdictions other than the United Kingdom may be restricted by law and persons into whose possession these materials come should inform themselves about and observe any relevant restrictions. In particular, these materials are not for publication or distribution, directly or indirectly, in, into or from the United States of America, Canada, Australia, the Republic of South Africa or Japan. Any failure to comply with the above restrictions may constitute a violation of such securities laws.

Ilika has not been and will not be registered under the U.S. Investment Company Act of 1940, as amended (the "Investment Company Act") and the holders of its shares will not be entitled to the benefits of that Act. In addition, the offer and sale of the shares mentioned herein have not been, and will not be, registered under the U.S. Securities Act of 1933, as amended (the "Securities Act"). No securities of Ilika may be offered or sold or otherwise transacted within the United States or to, or for the account or benefit of U.S. persons. In connection with the transaction referred to in this presentation the shares of Ilika will be offered and sold only outside the United States to, and for the account or benefit of non U.S. persons in "offshore transactions" within the meaning of, and in reliance on the exemption from registration provided by Regulation S under the Securities Act. No public offer of the shares is being made in the United States and the information contained herein does not constitute an offering of securities for sale in the United States, Canada, Australia, South Africa, the Republic of Ireland or Japan. No money, securities or other consideration is being solicited and, if sent in response to the information contained herein, will not be accepted. Any failure to comply with the above restrictions may constitute a violation of such securities laws.

Neither Ilika nor Numis Securities Limited ("Numis") nor any of their respective subsidiaries or affiliates makes any representation or warranty, express or implied as to the accuracy, completeness or verification of the information contained herein, and nothing contained herein shall be relied upon as a promise or representation whether as to past or future performance. In giving this presentation, neither Ilika nor Numis nor their respective advisers and/or agents undertake any obligation to provide the recipient with access to any additional information or to update this presentation or any additional information or to correct any inaccuracies in any such information which may become apparent.

This material is confidential and distribution of this material to any person other than the person to whom this information was originally delivered and to such person's advisors is unauthorised and any reproduction or redistribution of these materials, in whole or in part, or the disclosure of any of their contents, without the prior consent of Ilika or its affiliates is prohibited.

These materials and any offer mentioned herein if subsequently made are only addressed to and directed at persons in member states of the European Economic Area who are 'qualified investors' within the meaning of Article (2)(1)(e) of the Prospectus Directive (Directive 2003/71/EC). This document is for distribution in the United Kingdom only to persons who are authorised or exempt persons within the meaning of the Financial Services and Markets Act 2000 or to persons who have professional experience in matters relating to investments falling within Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, (all such persons together being referred to as, "relevant persons"). This document is directed only at relevant persons. Other persons should not act or rely on this document or any of its contents. Any investment or investment activity to which this presentation relates is available only to (i) in the United Kingdom, Relevant Persons and (ii) in any member state of the EEA other than the United Kingdom, Qualified Investors, and will be engaged in only with such persons. Solicitations resulting from this presentation will only be responded to if the person concerned is, (i) in the United Kingdom, a Relevant Person, and (ii) in any member state of the EEA other than the United Kingdom, a Qualified Investor.

These materials include statements that are, or may be deemed to be, "forward-looking statements" which are based on current expectations and projections about future events. In some cases, these forward-looking statements may be identified by the use of forward-looking terminology, including the terms "targets", "believes", "estimates", "anticipates", "expects", "intends", "may", "will" or "should" or, in each case, their negative or other variations or comparable terminology. They appear in a number of places throughout these materials and include statements regarding the intentions, beliefs or current expectations of Ilika and/or its directors concerning, among other things, the trading performance, results of operations, financial condition, liquidity, prospects and dividend policy of Ilika. By their nature, these forward-looking statements as well as those included in any other material discussed at any roadshow presentation involve risks and uncertainties because they relate to events and depend on circumstances that may or may not occur in the future. Forward-looking statements are not guarantees of future performance. A number of important factors could cause actual results or outcomes to differ materially from those expressed, projected or implied in any forward-looking statements. No one undertakes publicly to update or revise any such forward-looking statement. In light of these risks, uncertainties and assumptions, the events or circumstances referred to in the forward-looking statements may not occur. None of the future projections, expectations, estimates or prospects in this presentation should be taken as forecasts or promises nor should they be taken as implying any indication, assurance or guarantee that the assumptions on which such future projections, expectations, estimates or prospects have been prepared are correct or exhaustive or, in the case of the assumptions, fully stated in the presentation. No one undertakes to publicly update or revise any such forward-looking statement, whether as a result of new information, future events or otherwise. As a result of these risks, uncertainties and assumptions, you should not place undue reliance on these forward-looking statements as a prediction of actual results or otherwise.

Return targets are targets only and are based over the long-term on the performance projections of the investment strategy and market conditions at the time of modelling and are therefore subject to change. There is no guarantee that any target return can be achieved. Investors should not place any reliance on such target return in deciding whether to invest in Ilika.

To the extent available, the industry, market and competitive position data contained in these materials come from official or third party sources. Third party industry publications, studies and surveys generally state that the data contained therein have been obtained from sources believed to be reliable, but that there is no guarantee of the accuracy or completeness of such data. The contents of this document have not been independently verified, are not comprehensive do not contain all the information that a prospective purchaser of securities of Ilika may desire or require in deciding whether or not to offer to purchase such securities and do not constitute a due diligence review and should not be construed as such. No undertaking, representation, warranty or other assurance, express or implied, is made or given by or on behalf of Ilika or any of its directors, officers, employees, agents or advisers or any other person as to the accuracy, completeness or fairness of the information, forward-looking statements or opinions contained in this document and no responsibility or liability is accepted by any of them for any such information, forward-looking statements or opinions or in respect of any omission, and this document is distributed expressly on the basis that it shall not give rise to any liability or obligation if, for whatever reason, any of its contents are or become inaccurate, incomplete or misleading and neither Ilika nor any such persons undertakes any obligation to provide the recipient with access to additional information or to correct any inaccuracies herein which may become apparent.

Numis is acting exclusively for Ilika and is not acting for any other person or treating any other person as its client and will not be responsible to anyone other than Ilika for providing the protections afforded to clients of Numis or for providing advice in relation to the proposed placing. Apart from the responsibilities and liabilities, if any, which may be imposed on Numis by the Financial Services and Markets Act 2000, Numis accepts no responsibility whatsoever for the contents of this presentation, including its accuracy, completeness or verification or for any other statement made or purported to be made by it, or on its behalf, in connection with Ilika or the subject matter of this presentation. Numis accordingly disclaims all and any liability (whether arising in tort, delict, under contract or otherwise) (save as referred to above), which they might otherwise have in respect of this presentation or such statement.

The information and opinions contained in this presentation are provided as at the date of this presentation and are subject to verification, completion and change without notice. By attending the presentation you agree to be bound by the foregoing limitations.

**NOT FOR DISTRIBUTION DIRECTLY OR INDIRECTLY INTO THE UNITED STATES, CANADA, AUSTRALIA, SOUTH AFRICA, THE REPUBLIC OF IRELAND OR JAPAN OR ANY OTHER JURISDICTION IN WHICH THE SAME WOULD BE UNLAWFUL. THIS COMMUNICATION IS DIRECTED ONLY AT PERSONS TO WHOM IT IS LAWFUL TO COMMUNICATE TO.**

# Placing overview

## ▲ Driving towards licensing

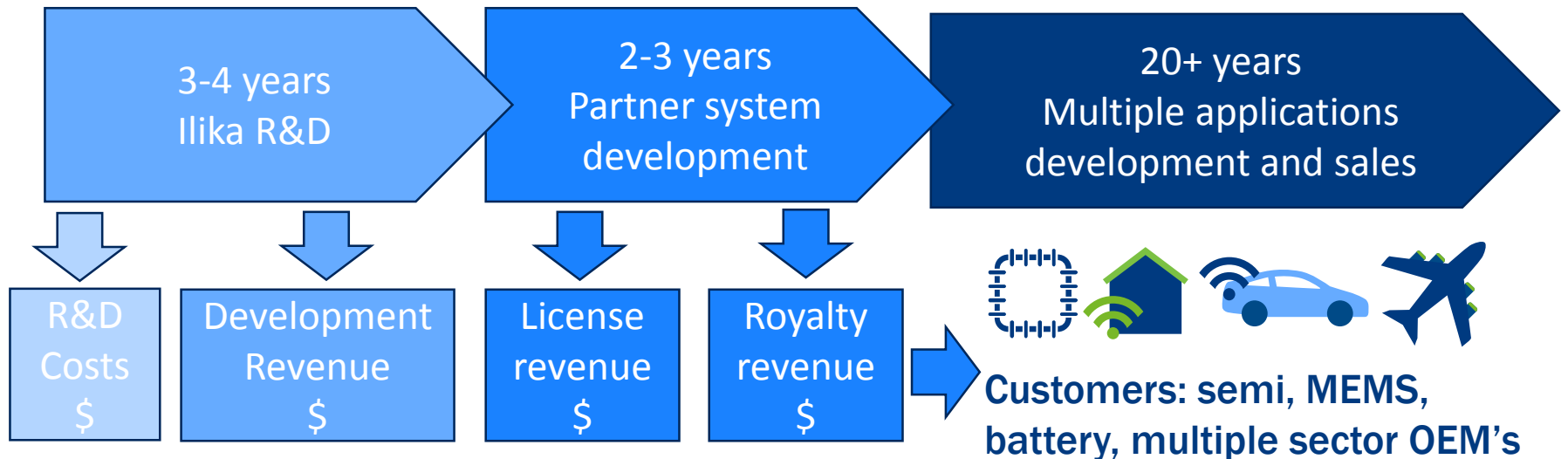
- ▲ Active dialogue with 27 potential licensees
- ▲ 2 at proposal stage and 1 at MTA
- ▲ Targeting 2 licensing deals by the end of FY17

## ▲ Placing headlines:

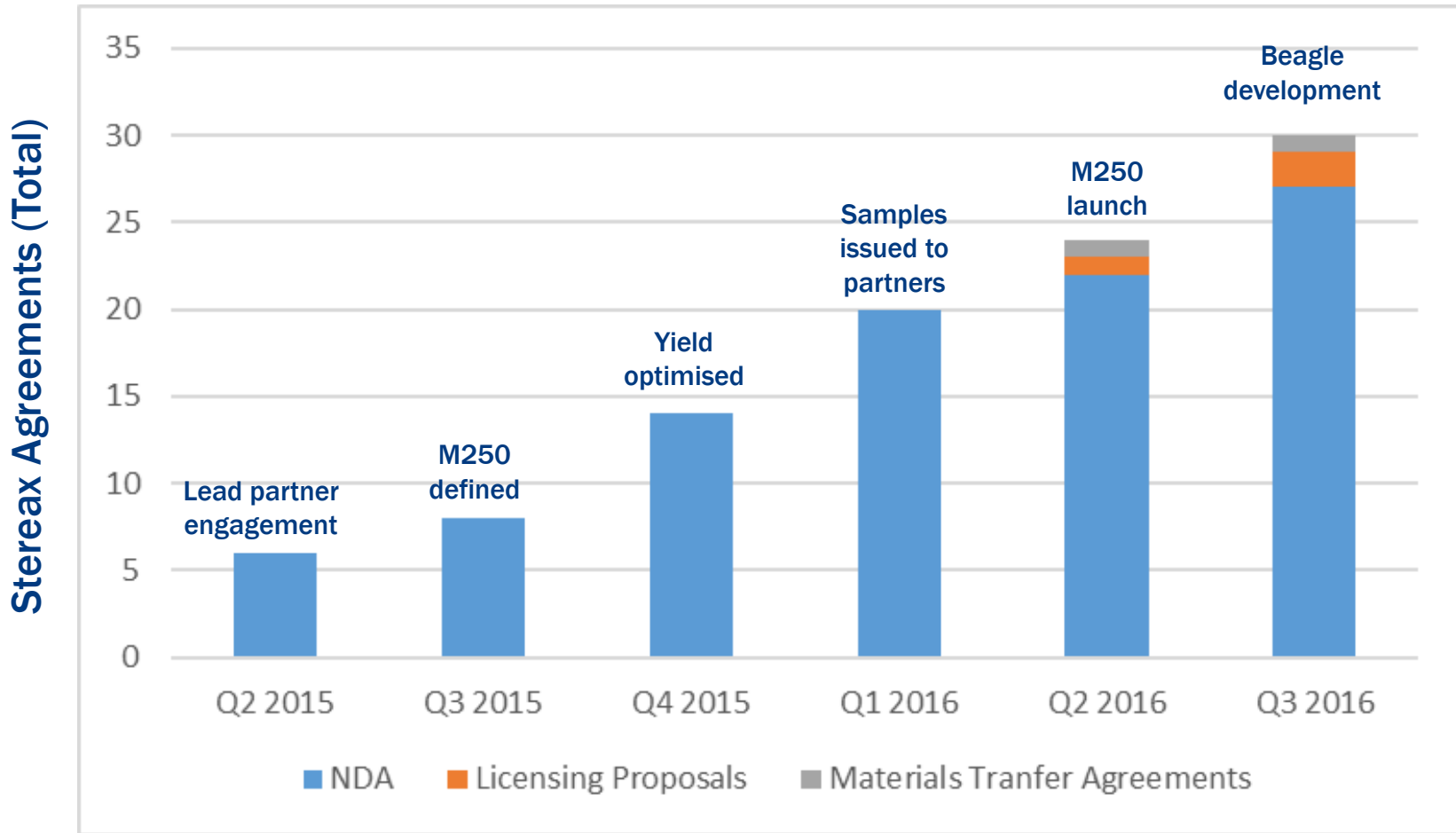
- ▲ Size: up to 10% of issued capital
- ▲ Objective: reinforce balance sheet during Stereax commercialization negotiations
- ▲ EIS/VCT qualifying
- ▲ Timetable
  - ▲ Investor meetings: Wednesday 21 – Friday 23 September
  - ▲ Books close: Monday 26 September
  - ▲ Settlement: Thursday 29 September
- ▲ Directors participation of £55k
- ▲ Nomad, broker and bookrunner: Numis Securities

# Ilika business model

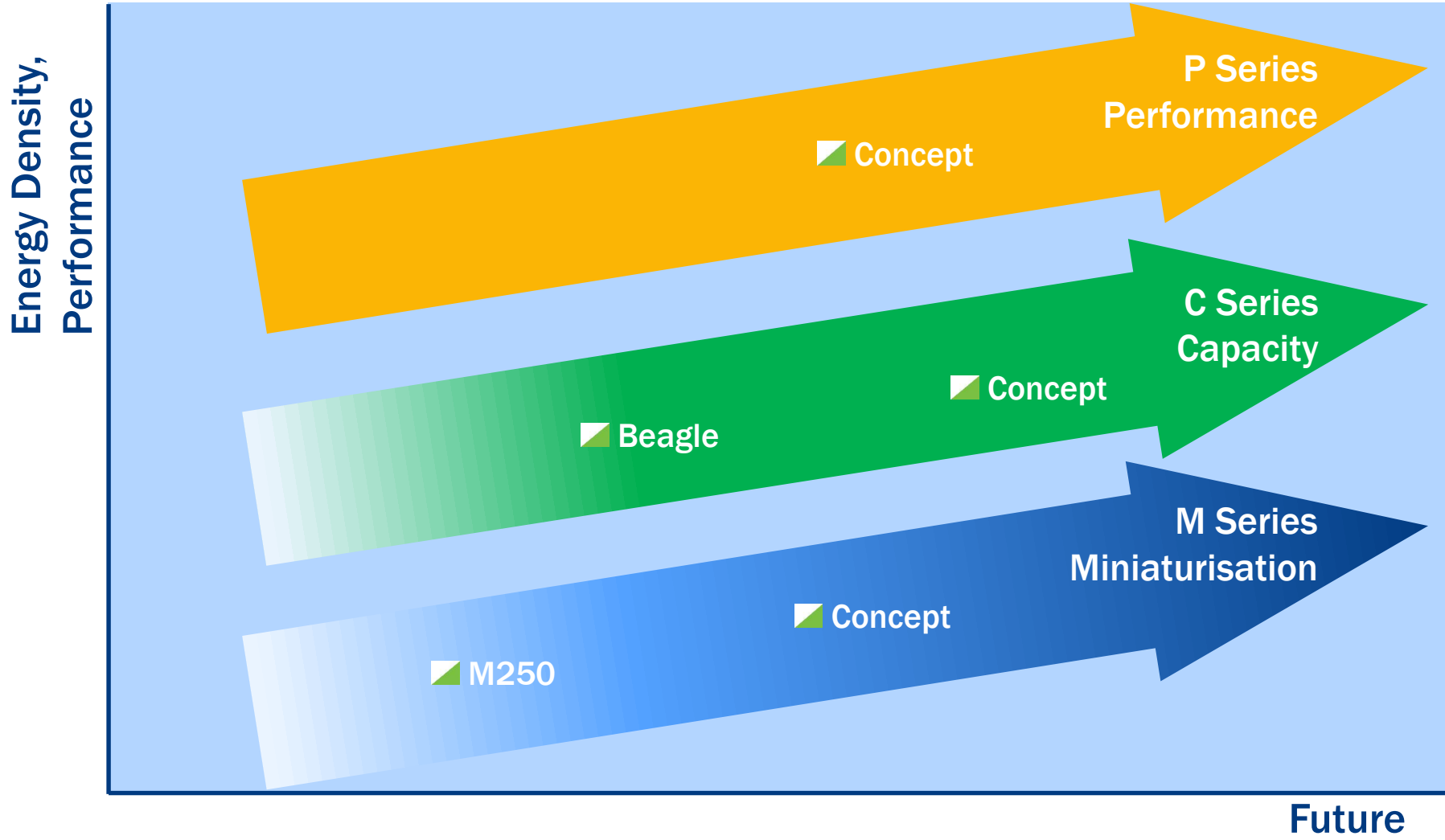
- ▲ Advanced solid-state technology developer
- ▲ Business model yielding potential high margins over time
  - ▲ Upfront license fee from flexible licensing models
  - ▲ Low capital cost to market for Ilika
  - ▲ Ongoing royalties, based on a percentage of system volume shipped
  - ▲ Technology deployed across multiple applications
- ▲ Long term, global growth markets



# Making Commercial Progress



# Stereax road map



# Modelling Production Cost

## 1 cm<sup>2</sup> production at volume

<b>Stereax M250</b>	<b>1 cm<sup>2</sup></b>
Estimated Capital cost –if new (depreciate over 5 yrs)	\$67m
Batteries per year	47m
Depreciation cost per battery	\$0.28
Manufacturing cost per battery	\$0.22
Total cost of a battery	\$0.50

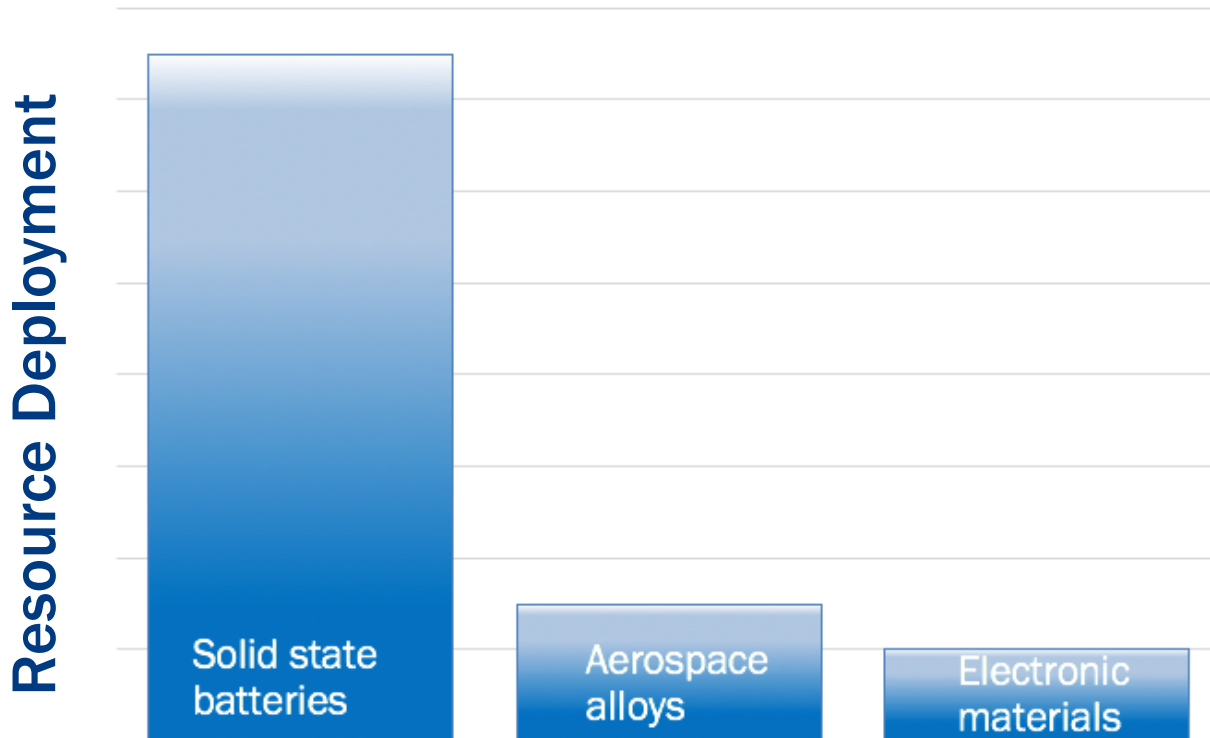
## 1 mm<sup>2</sup> prototype production

<b>Medical device/ on-chip battery</b>	<b>1 mm<sup>2</sup></b>
Estimated Capital cost (depreciate over 5 yrs)	\$3.3m
Batteries per year	14m
Depreciation cost per battery	\$0.05
Manufacturing cost per battery	\$0.20
Total cost of a battery	\$0.25

▲ Capital cost reduced substantially for OEM manufacturers with suitable existing facilities

▲ Scope for considerable economies of scale

# Other activities at Ilika



▲ Solid-state battery activities account for 75% of resource deployment



# Development projects

## ▲ Battery materials

- ▲ Protected Anodes with Johnson Matthey  
(£365k in 3 year programme from August 16)

## ▲ Aerospace alloys

- ▲ Self- Healing alloys with GKN and BAE  
(£466k in 3 year programme from Sept 15)
- ▲ Superalloys with Rolls-Royce  
(£875k in 3 year programme from Feb 14)

## ▲ Electronics

- ▲ 2-D Plasmonic Lens materials with Seagate  
(£194k in 2 year programme from Feb 16)



**Rolls-Royce**



# Summary cashflow 2015-16

	£m	£m
Opening balance 01/05/15		6.0
Grants and project income	0.6	
Staff costs	(2.1)	
Other overhead and expenses	(1.8)	
Cash used in operations		(3.3)
R&D tax credits		0.3
Closing balance 30/04/16		3.0

# Placing overview

## ▲ Driving towards licensing

- ▲ Active dialogue with 27 potential licensees
- ▲ 2 at proposal stage and 1 at MTA
- ▲ Targeting 2 licensing deals by the end of FY17

## ▲ Placing headlines:

- ▲ Size: up to 10% of issued capital
- ▲ Objective: reinforce balance sheet during Stereax commercialization negotiations
- ▲ EIS/VCT qualifying
- ▲ Timetable
  - ▲ Investor meetings: Wednesday 21 – Friday 23 September
  - ▲ Books close: Monday 26 September
  - ▲ Settlement: Thursday 29 September
- ▲ Directors participation of £55k
- ▲ Nomad, broker and bookrunner: Numis Securities

### Existing share capital

Shares in issue:	65,802,710
Options outstanding:	7,443,212*
Fully diluted shares:	73,245,922
Director's holdings shares:	1.1% of shares in issue, 7.7% of fully diluted

# Market dynamics and product differentiation

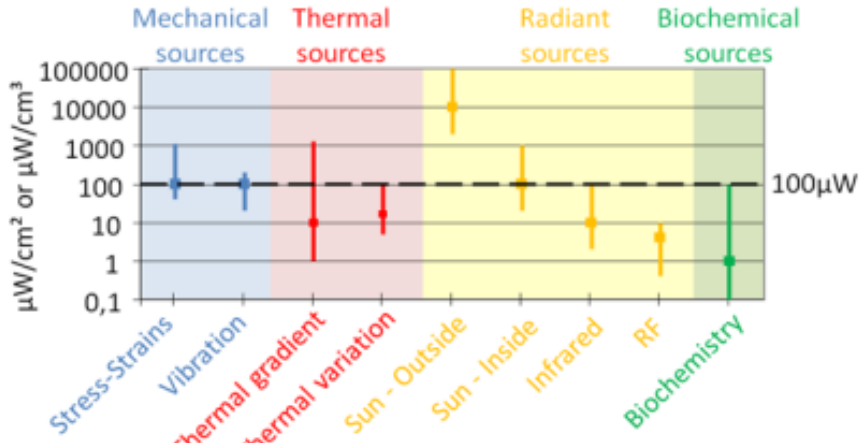
# An increasingly diverse and rich IoT world



- ▲ Est. up to 15 Billion sensors in 2015<sup>\*</sup>
- ▲ 200% growth per annum from 2007 to 2014<sup>\*</sup>
- ▲ Power is key to enabling IoT applications

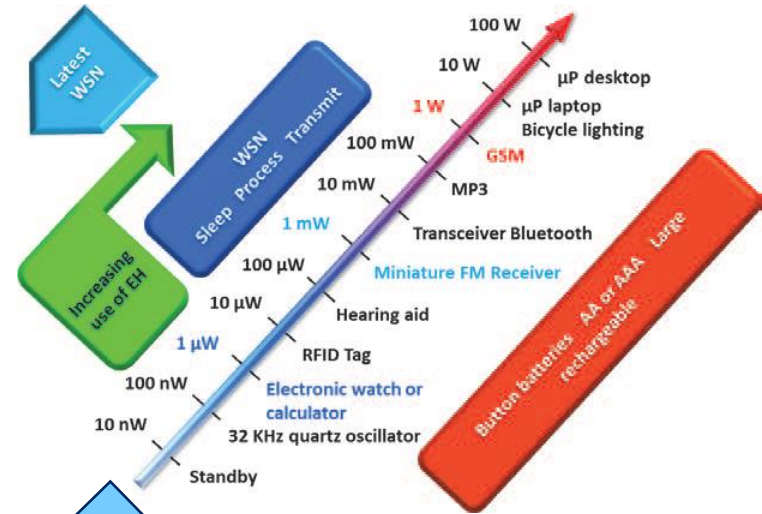
# Perpetual beacon

## Efficient energy harvesters



Source: CEA-Leti

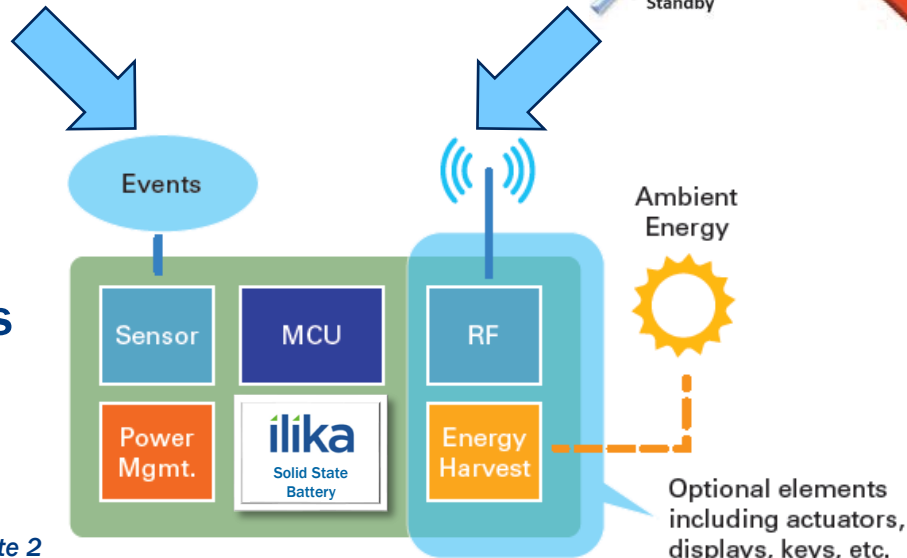
## Ultra low power electronics, e.g. ARM Cortex



Source: Note 1

## Micro-Batteries enable true "Leave for life"

Source: Note 2



# Perpetual energy storage requirements

	Conventional Li-ion	Supercapacitors	Solid State Batteries
Trickle-charging			
5,000 cycles+			
Ultra-compact			
Low leakage			
Capacity			
Power			

# Benefits of Ilika solid state batteries

## ▲ Superior energy density (mAh/cm<sup>2</sup>)

▲ Superior cathode utilisation (40% increase)

▲ Multiple interconnected cells

▲ Useful for smart buildings and transport

## ▲ High temperature stability

▲ Target operating temperature for standard Ilika batteries > 100 °C.

▲ Useful for transport and process applications

## ▲ No free Lithium, reduces encapsulation complexity and leakage risk

▲ Increased moisture resistance.

▲ Useful for medical and semiconductor applications.

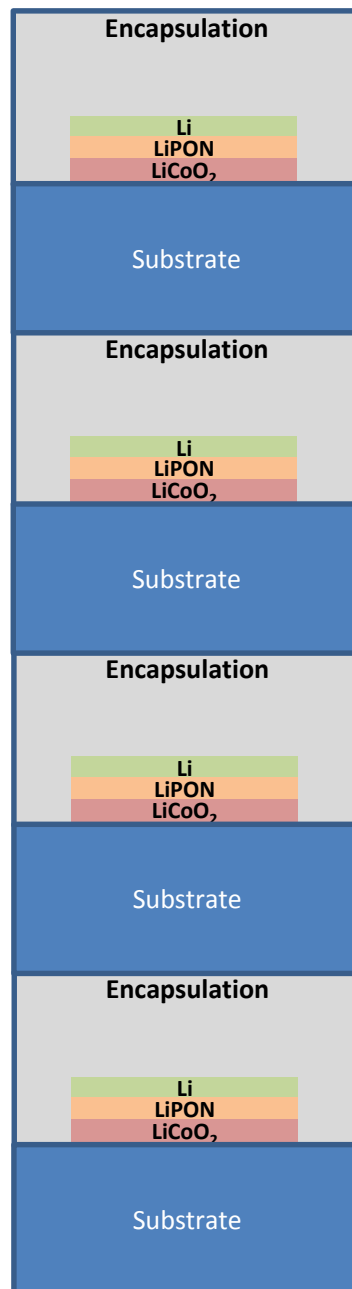
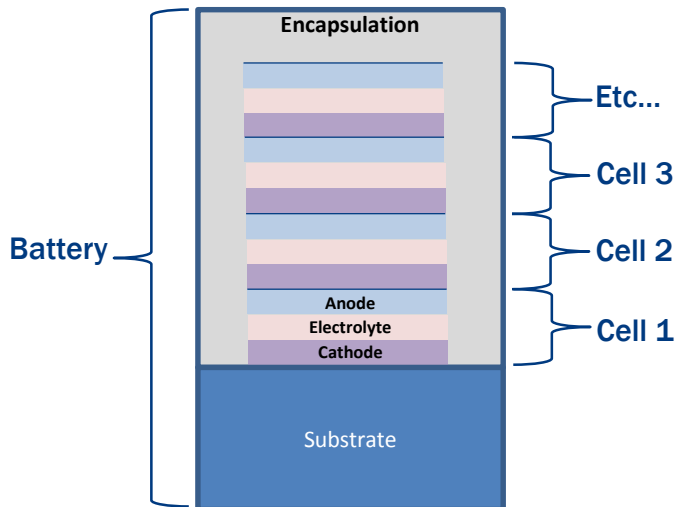




# Stacking: a world first for Ilika

## Ilika Thin Film Batteries

Ilika's technology enables stacking cells by using thermally compatible materials & isothermal processes.



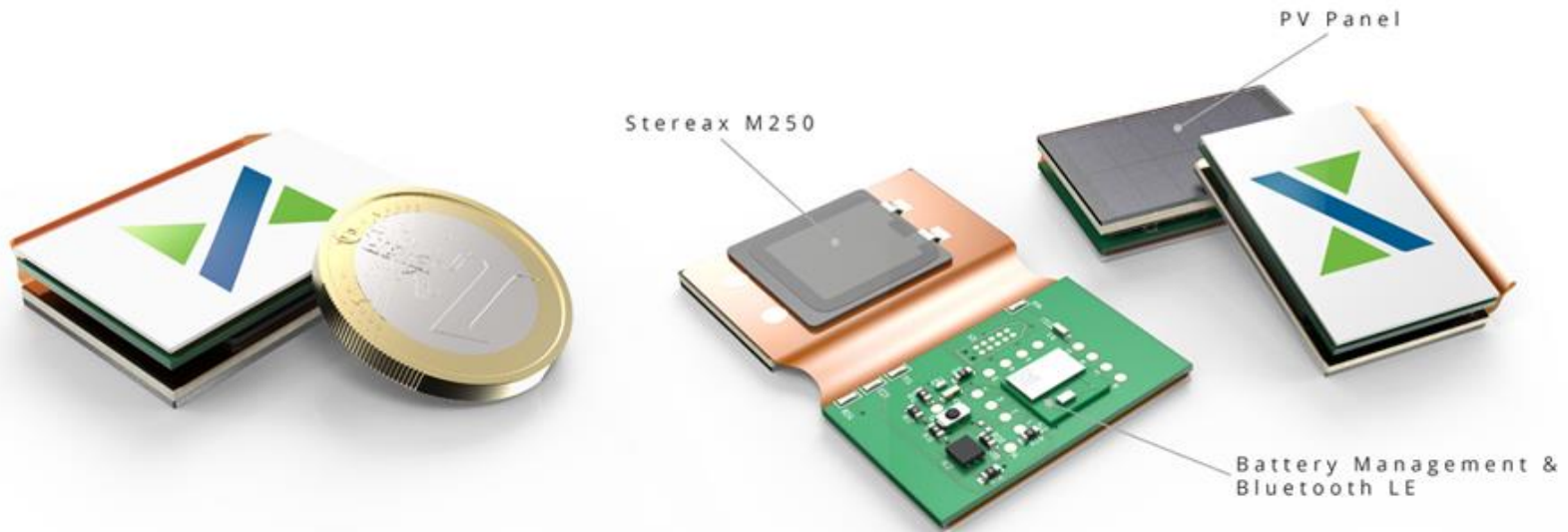
## Alternative Technologies

Alternative technology and materials licensed by Oak Ridge cannot be stacked because heat treatments in subsequent layers degrade previous layers.

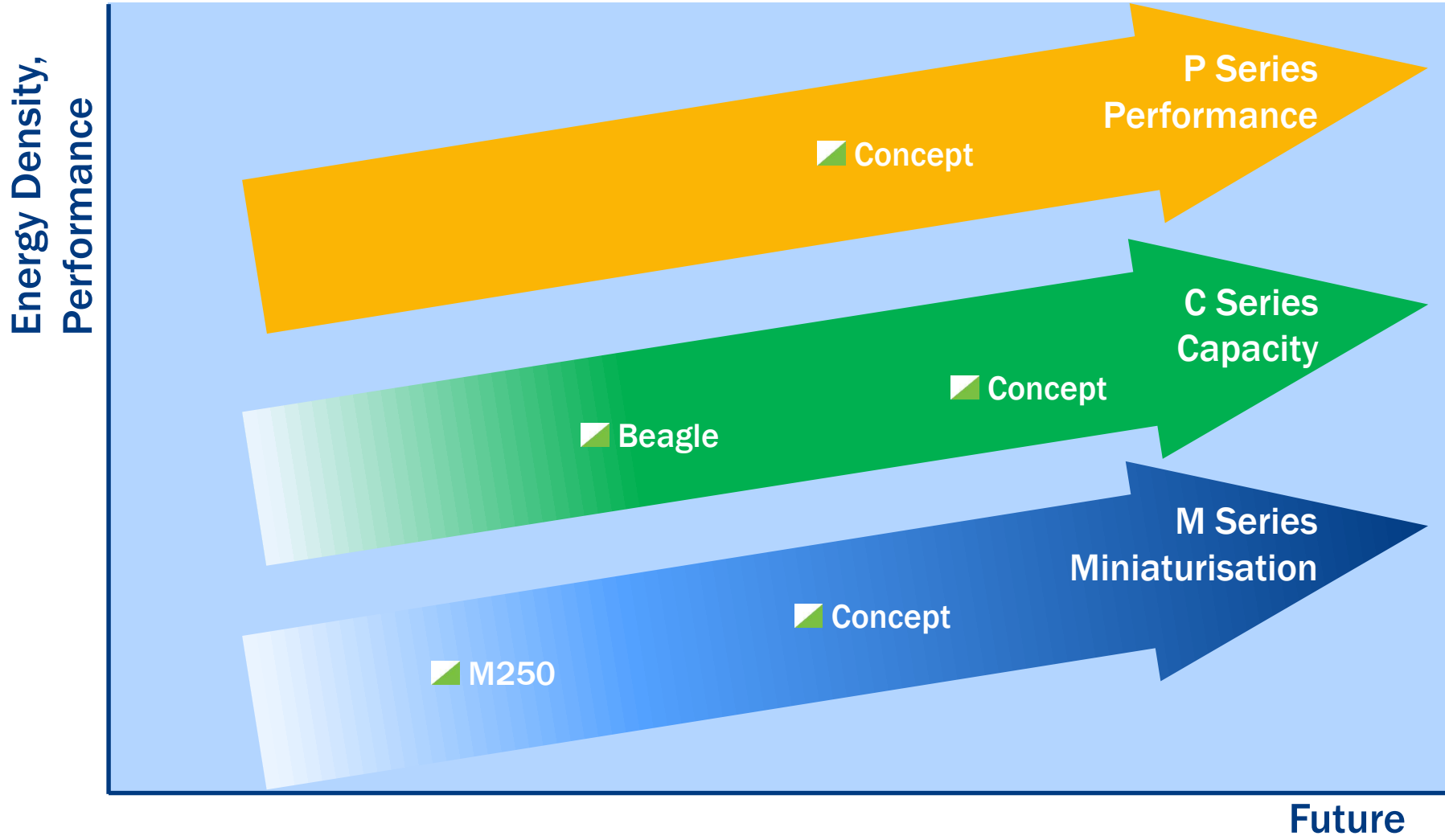
*Huge volume and mass waste when cells are stacked*

# Demonstrator

## ▲ Stereax M250 deployed in a perpetual temperature sensor



# Stereax road map



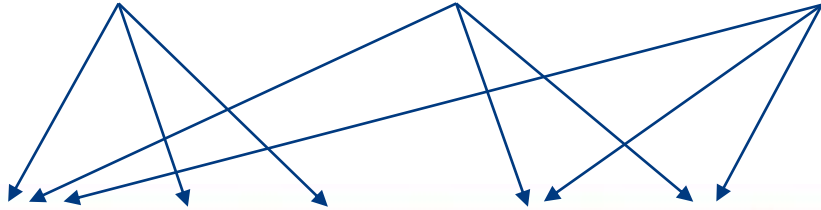
# IOT Worldwide Revenue Opportunity

stereax™

M series

C series

P series



2018

Banking	Manufacturing	Retail	Healthcare	Transportation	Utilities	Government	Other
\$	Factory	Shopping Cart	Medical Cross	Car/Truck	Power Plant	Government Building	Checkmark
\$154 B	\$913 B	\$326 B	\$313 B	\$325 B	\$201 B	\$570 B	\$1.79 T

\$4.59T

2014

Banking	Manufacturing	Retail	Healthcare	Transportation	Utilities	Government	Other
\$	Factory	Shopping Cart	Medical Cross	Car/Truck	Power Plant	Government Building	Checkmark
\$92 B	\$472 B	\$160 B	\$132 B	\$156 B	\$100 B	\$301 B	\$877 B

\$2.29T

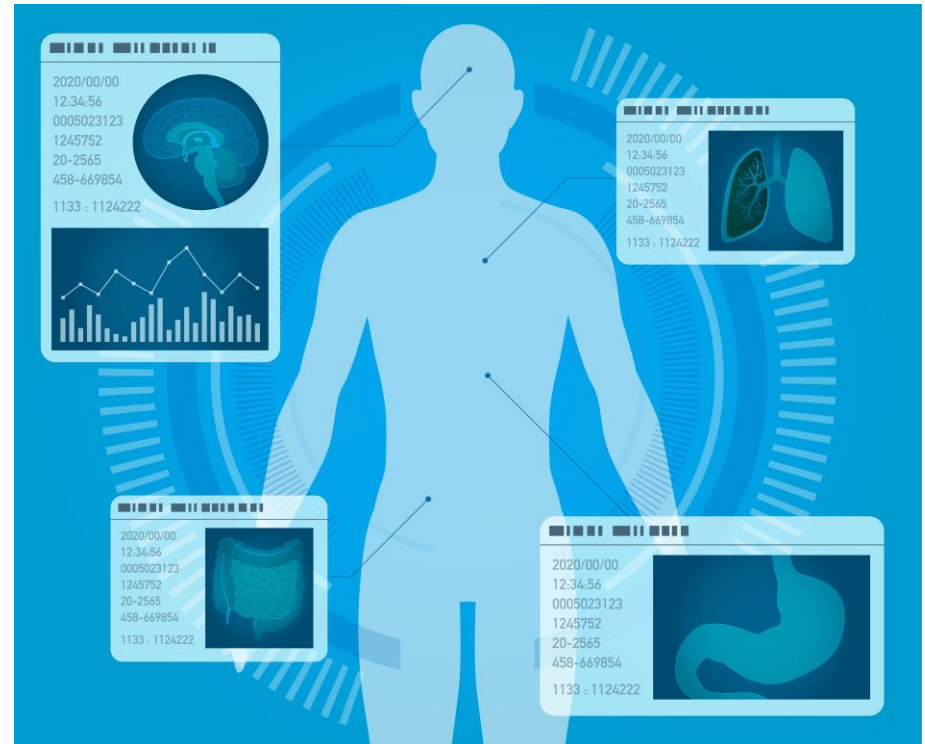
IDC, Internet of Things Spending Guide by Vertical Market, 2014\*



# Stereax M Battery Applications

## Medical wearables and devices

- mm scale batteries for miniature devices
- moisture resistant for bio-application
- non-flammable



# Stereax C Battery Applications

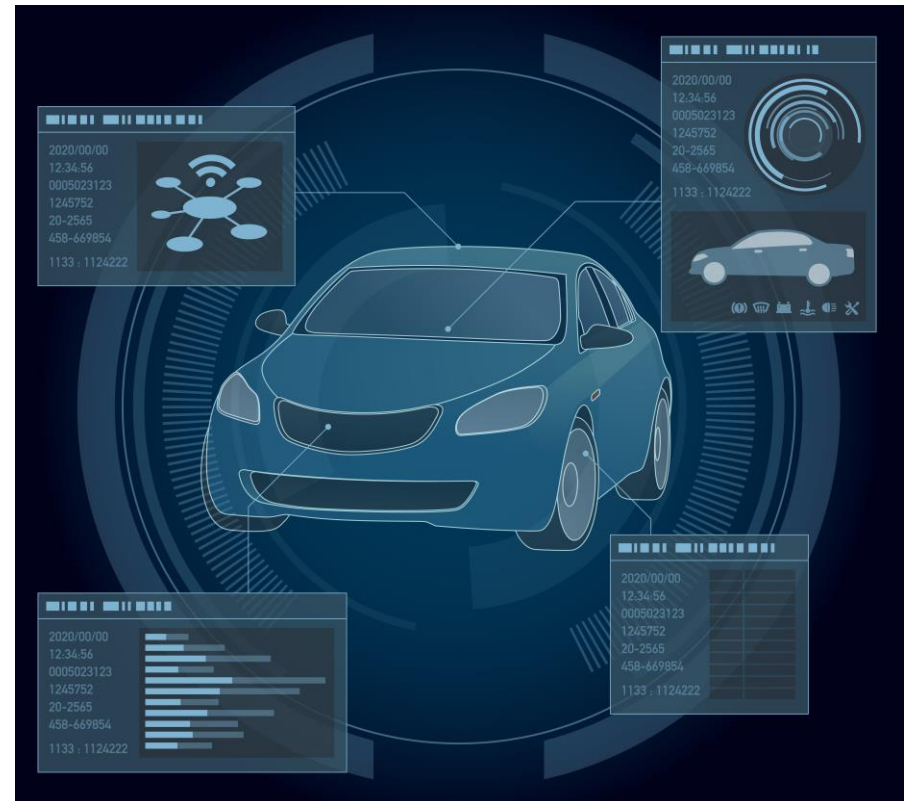
- ▲ **Smart buildings and infrastructure**
  - ▲ 5,000 cycles enabling “leave for life”
  - ▲ thin profile
  - ▲ Capacity to operate sensors perpetually with daily PV recharge



# Stereax P Battery Applications

## Transport

- ▲ Average modern car has 100 sensors
- ▲ Trend towards autonomous vehicles
- ▲ Cabling now 3<sup>rd</sup> heaviest component (behind chassis and engine) averaging 70kg
- ▲ Elevated temperatures around engine and brakes require robust batteries



# Contact details

▲ [www.ilika.com](http://www.ilika.com)

▲ @ilikapl

▲ /ilika-plc

