

# Biocartis 2017 results and business update

1 March 2018

# Today's presenters



**Ewoud Welten**  
Chief Financial Officer



**Herman Verrelst**  
Chief Executive Officer

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# Agenda

1. 2017 results
2. Business update
3. Outlook 2018
4. Q&A

# Fully automated molecular testing with Idylla™



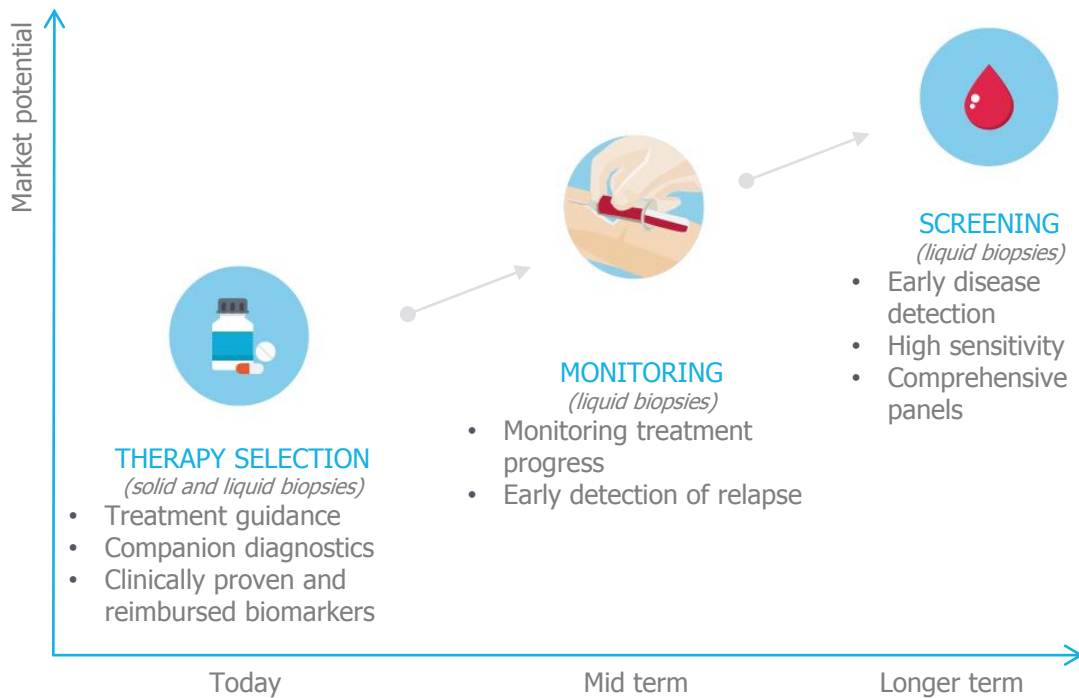
- Fully automated sample-to-result qPCR platform
- Superior and validated performance versus competition
- Combining advantages of point-of-care testing with quality of lab reference testing enables:
  - Decentralized testing by all labs
  - 'First-time-right' results
  - Short turnaround times (~ 'same-day-result')

# Menu focus on Oncology





## Idylla™ oncology Unique Selling Points

- 1 Ability to combine advantages of point-of-care testing with **performance** of lab reference testing (i.e. enabling oncology MDx in virtually any lab setting)
- 2 Reduction of **time-to-result** from weeks to **hours**
- 3 **Sample-to-result** (i.e. full automation) capabilities for:
  - o **Solid biopsies:** FFPE-slices\* and tumor tissue
  - o **Liquid biopsies:** blood, plasma and urine

## Expansion of the MDx application areas



# Accelerated menu expansion with partners

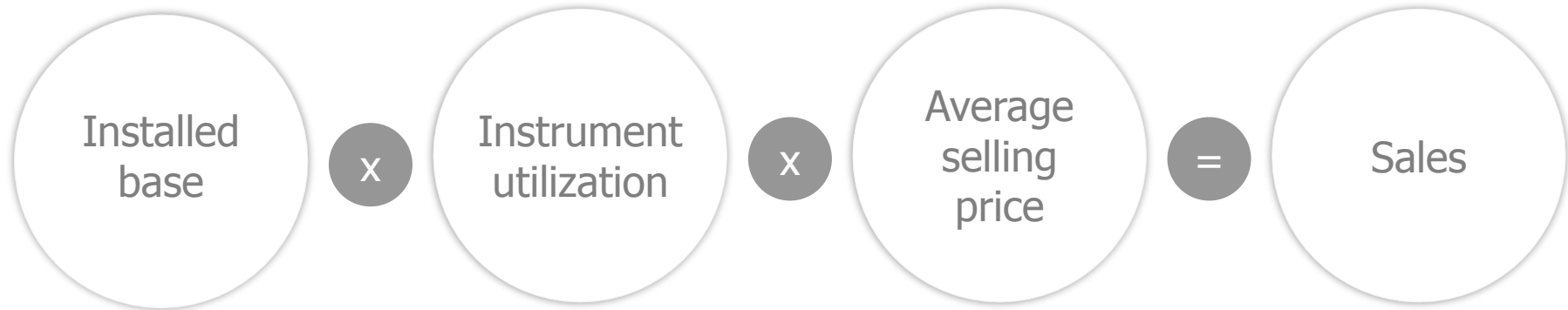
	Pharma & biotech companies	Content partners	Development partners	
Focus	<ul style="list-style-type: none"> <li>(Joint) development of CDx<sup>1</sup> on Idylla™ platform</li> </ul>	<ul style="list-style-type: none"> <li>Porting of proprietary biomarker panels developed and validated by third parties on Idylla™ platform</li> </ul>	<ul style="list-style-type: none"> <li>Development Biocartis Idylla™ assays in partnership with research institutions</li> </ul>	
Benefit Biocartis	<ul style="list-style-type: none"> <li>Faster commercial adoption, higher market shares</li> </ul>	<ul style="list-style-type: none"> <li>Proprietary 3rd party content on Idylla™ platform</li> </ul>	<ul style="list-style-type: none"> <li>Lowered menu development costs</li> </ul>	
Benefit partners	<ul style="list-style-type: none"> <li>Better and faster selection of eligible patients for targeted therapies given faster TaT &amp; high sensitivity:                             <ul style="list-style-type: none"> <li>Fast TaT: reduces competition with therapies not requiring a biomarker</li> <li>High sensitivity: more patients detected with relevant biomarkers</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Accelerated global roll-out of content</li> <li>No platform education needed: focus on content education</li> <li>Realization of cost efficiencies</li> </ul>	<ul style="list-style-type: none"> <li>Contribution to medical innovation</li> <li>Knowledge sharing and building</li> </ul>	
Partners			 <p>UK based medical research charity<sup>2</sup></p>	 <p>Singapore's Agency for Science, Technology and Research<sup>3</sup></p>

1. CDx = Companion Diagnostics

2. On 15 June 2017 MRC Technology changed its name in LifeArc. LifeArc has been involved in helping deliver a number of therapies including Keytruda (pembrolizumab, marketed by MSD) which is an important immunotherapy treatment for various cancers

3. Partnership is with ETPL, the commercialization arm of A\*STAR

# Platform and consumable driven business model



## Key drivers

- Commercial footprint
- Commercialization partnerships

## Key drivers

- Menu of tests
- Regulatory registrations

## Key drivers

- Reimbursement
- Competitive advantage

## Gross margin driven by

- Volume
- Manufacturing automation

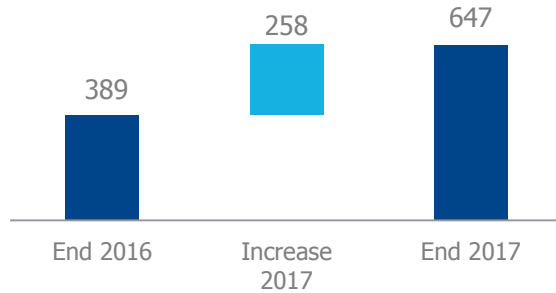


# Key messages FY 2017 results

Installed base	+258 to installed base, close to 650 Idylla™ instruments at year-end
Cartridge consumption	x2.8 times 2016 volume to over 71k Idylla™ cartridges
Commercial product revenues	Increased year-over-year with 124% to EUR 12.7m
Total operating income	Increased year-over-year with 68% to EUR 23.1m
Cash position	EUR 112.8m per year-end
Test menu	4 new CE-IVD tests for our oncology menu. First test cleared with US FDA
Partnerships	Four new menu partnerships announced in 2017
Commercial footprint	US commercialization initiated

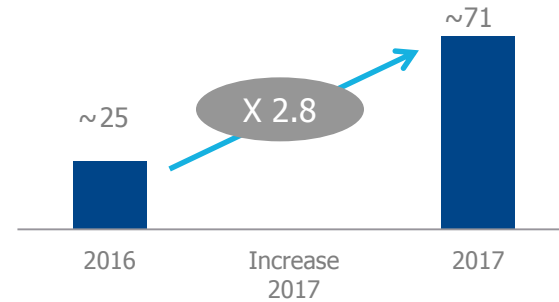
# Strong installed base & cartridge volume growth

## Installed base



- Strong new placements in both European and RoW distribution markets: contributed to majority of overall installed base growth
- Growth was complemented by initial placements in the US market during H2 2017

## Commercial cartridge volume (x 1,000)



- Driven by continued test menu expansion and installed base growth
- Strong performance in European direct markets, overall volume slightly below expectations driven by a slower take-up in RoW distribution markets

# Commercial product revenues increased with 124% in 2017

## Breakdown product revenues (in EUR 1,000)

By type	2017	2016
Commercial revenue	12,748	5,691
R&D revenue	187	1,076
<b>Product sales revenue</b>	<b>12,936</b>	<b>6,767</b>

By product	2017	2016
Idylla™ System Sales	4,620	2,752
Cartridge Sales	8,316	4,015
<b>Product sales revenue</b>	<b>12,936</b>	<b>6,767</b>

## Breakdown total operating income

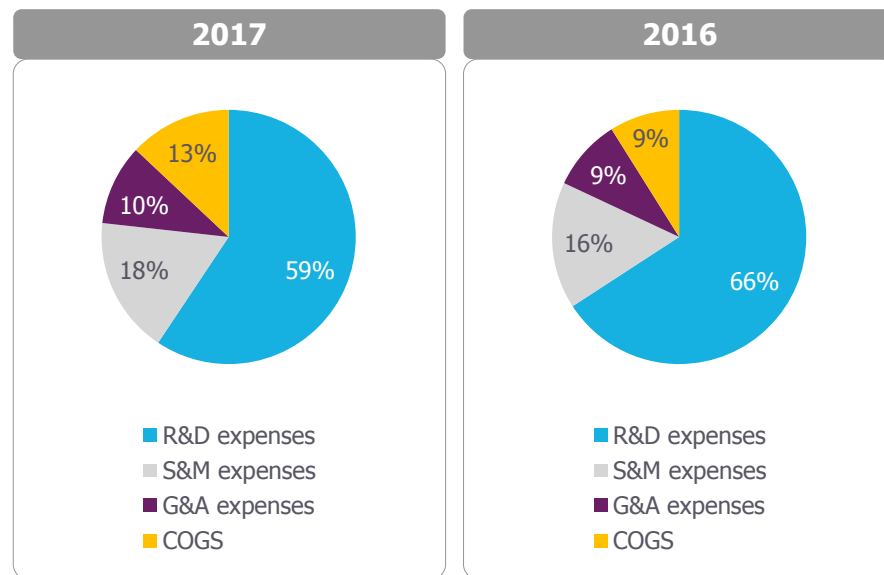
In EUR 1,000	2017	2016
Product sales revenue	12,936	6,767
Collaboration revenue	7,739	5,278
Service revenue	282	53
<b>Total revenue</b>	<b>20,957</b>	<b>12,098</b>
Grants and other income	2,153	1,674
<b>Total operating income</b>	<b>23,110</b>	<b>13,772</b>

# 2017 net result of EUR -42m

## Condensed income statement

In EUR 1,000	2017	2016
<b>Total operating income</b>	<b>23,110</b>	<b>13,772</b>
COGS	(8,673)	(5,701)
R&D expenses	(39,594)	(42,091)
S&M expenses	(11,600)	(10,324)
G&A expenses	(6,832)	(5,827)
<b>Total operating expenses</b>	<b>(66,699)</b>	<b>(63,943)</b>
<b>Operating result</b>	<b>(43,589)</b>	<b>(50,171)</b>
Net financial result	(1,736)	(586)
Income taxes	3,365	980
<b>Net result</b>	<b>(41,960)</b>	<b>(49,777)</b>

## Breakdown operating expenses



# Cash position of EUR 113m end of 2017

## Condensed cash flow statement

In EUR 1,000	2017	2016
Result for the period	(41,960)	(49,777)
Depreciation and amortization	5,096	4,848
Working capital changes	(3,403)	(8,699)
Other adjustments	(1,138)	316
<b>CF operating activities</b>	<b>(41,405)</b>	<b>(53,312)</b>
<b>CF investing activities</b>	<b>(4,320)</b>	<b>(9,342)</b>
<b>CF financing activities</b>	<b>75,256</b>	<b>41,804</b>
<b>Total net cash flow</b>	<b>29,531</b>	<b>(20,850)</b>
<b>Cash and cash equivalents<sup>1</sup></b>	<b>112,765</b>	<b>83,247</b>
Financial debt <sup>2</sup>	35,388	31,407

1. Including EUR 1.2 million restricted cash related to KBC Lease financing  
 2. Current portion of EUR 4.0m

## Remarks

- **Cash flow from operating activities** improved year-over-year as the result of:
  - A higher result for the period
  - Modest investments in working capital for 2017 compared to material movements in working capital for 2016
- **Cash flow from investing activities** in 2017:
  - Mainly related to capitalized Idylla™ systems placed with customers under (reagent) rental agreements and Idylla™ systems used for assay development needs
  - Note: most investments for cartridge manufacturing expansion were directly paid for via lease financing
- **Cash flow from financing activities** in 2017 mainly related to the net proceeds from the private placement in November 2017
- Total net cash flow in 2017 of EUR 29.5m, resulting in a **cash position** per year-end of **EUR 112.8m**. Note: per year-end no drawdowns made on the multiple purpose credit facility

# Four new CE-IVD oncology tests and first US FDA clearance

## Oncology

## Infectious disease

### NRAS Mutation Test



- CE-IVD
- **Colorectal cancer**
- 18 NRAS mutations, directly on 1 FFPE<sup>1</sup> tissue
- TaT<sup>2</sup>: Approx. 120 minutes sample-to-result
- < 2 minutes hands-on time

### ctKRAS Mutation Test



- CE-IVD
- **Colorectal cancer**
- 21 mutations, directly on 1 ml plasma
- TaT<sup>2</sup>: Approx. 130 minutes sample-to-result
- < 1 minute hands-on time

### ctNRAS-BRAF Mutation Test



- CE-IVD
- **Colorectal cancer**
- 18 NRAS mutations and 5 BRAF mutations, directly on 1 ml plasma
- TaT<sup>2</sup>: Approx. 110 minutes sample-to-result
- < 1 minute hands-on time

### EGFR Mutation Test



- CE-IVD
- **Lung cancer**
- 51 mutations, directly on 1 FFPE<sup>1</sup> tissue
- TaT<sup>2</sup>: Approx. 150 minutes sample-to-result
- < 2 minutes hands-on time

### Respiratory (IFV-RSV) Panel



- US FDA 510(k) clearance
- **Intended for detection of various strains of Influenza Virus (IFV) and Respiratory Syncytial Virus (RSV)**
- TaT<sup>2</sup>: Approx. 50 minutes sample-to-result
- < 2 minutes hands-on time

MERCK

MERCK

Johnson & Johnson

# Initiated breast cancer menu development with partners

	Description	Partner	Partnership structure
<p>Resistance monitoring test</p>	<ul style="list-style-type: none"> <li>Liquid biopsy test</li> <li>Monitoring of metastatic breast cancer patients for resistance to hormone therapy</li> </ul>	 <p>UK based medical research charity<sup>1</sup></p>	<ul style="list-style-type: none"> <li>Development multiple Idylla™ tests</li> <li>LifeArc acts as development contractor</li> <li>Biocartis responsible for commercialization under own label</li> </ul>
<p>Therapy selection test</p>	<ul style="list-style-type: none"> <li>Solid biopsy test</li> <li>Supporting optimal therapy selection decisions for breast cancer patients</li> </ul>	 <p>Singapore's Agency for Science, Technology and Research<sup>2</sup></p>	<ul style="list-style-type: none"> <li>Parties will co-invest in development of selected Idylla™ tests</li> <li>A*STAR acts as development partner</li> <li>Biocartis responsible for commercialization under own label</li> </ul>
<p>Oncotype Dx Breast Recurrence Score® test</p>	<ul style="list-style-type: none"> <li>Solid biopsy test</li> <li>Tailoring treatment of breast cancer patients based on the biology of their individual disease</li> </ul>	 <p>US based provider of genomic-based diagnostic tests in cancer</p>	<ul style="list-style-type: none"> <li>Genomic Health to develop Idylla™ versions of proprietary Genomic Health tests</li> <li>Genomic Health responsible for commercialization under own label</li> <li>Biocartis acts as supplier of tests</li> </ul>

# Strategic collaboration with Genomic Health<sup>®</sup>

LIFE, CHANGING.

## Background collaboration

- Focused on **exclusive test development** of proprietary Genomic Health tests on the Idylla™ platform
- Aimed at **accelerating** adoption and market access around the world of Genomic Health's tests
- First test to be developed on Idylla™ is the Oncotype DX Breast Recurrence Score<sup>®</sup> test

## Background Genomic Health

- A leading provider of genomic-based diagnostic tests in cancer with **revenues of USD 328m** in 2016
- Based in California (US) and listed on NASDAQ (GHDX) with a market cap of approx. USD 1bn
- **On-market tests** for **breast**, **prostate** and **colon cancer**, currently offered through own service laboratories

## Oncotype Dx Breast Recurrence Score<sup>®</sup> test

*oncotype* **DX**<sup>®</sup>  
*Breast Recurrence Score*

- Provides **personalized information** for **tailoring treatment** of breast cancer patients based on the biology of their individual disease
- Predicts the **likelihood of chemotherapy** benefit as well as the chance of **cancer recurrence** in early-stage breast cancer patients
- Included in **all major cancer guidelines worldwide** and considered as standard of care for women with early-stage breast cancer



# AMGEN CDx agreements

## CDx Vectibix®

- Aimed at registering Idylla™ RAS biomarker tests with US FDA as a **companion diagnostic** (CDx) test for Vectibix® (panitumumab<sup>1</sup>)
- Biocartis will pursue a premarket approval (PMA<sup>2</sup>) for the Idylla™ KRAS Mutation Test and the Idylla™ NRAS-BRAF Mutation Test with the **US FDA**
- Amgen will provide **financial** and **operational support** to Biocartis for the PMA process


## CDx novel oncology compound

- Aimed at the **development of Idylla™ CDx biomarker tests for a novel oncology compound** to be used in the **treatment of certain solid tumors**

CDx agreements further build on Biocartis' and Amgen's collaborations<sup>3</sup> in Europe focused on accelerating results of RAS biomarker testing from up to one month to, in principle, same-day results for mCRC patients

# US commercialization initiated

## Commercialization approach

- Distribution agreement in place with [Fisher Healthcare](#): focus on distribution of Idylla™ oncology products<sup>2</sup>
- Hybrid sales approach:
  - [Distributor sales](#) through  [fisher healthcare](#)<sup>1</sup>
  - [Direct sales](#) through Biocartis' US sales team (also providing support to Fisher Healthcare team)
- [US FDA 510\(k\)](#) exemption Idylla™ instrumentation and first test cleared by US FDA, the Idylla™ Respiratory (IFV-RSV) Panel
- Successful placement of [first Idylla™ instruments](#) with US customers

## US Idylla™ performance data

- Idylla™ performance data presented at annual [AMP<sup>4</sup> meeting](#) on 15 November 2017
- Dr. Tsongalis presented results from an internal study comparing the [performance of the Idylla™ KRAS, NRAS and BRAF tests](#) to the internal [Standard of Care methods](#) at the Dartmouth Hitchcock Medical Center, in this case based on a [NGS technology](#)
- Study<sup>5</sup> indicated [full concordance](#) of Idylla™ KRAS, NRAS and BRAF test with internal Standard of Care method in terms of sensitivity, specificity and predictive value
- Dr. Gregory J. Tsongalis, BS, MS, PhD is Professor of Pathology at Dartmouth Hitchcock Medical Center, New Hampshire, US

# Business update

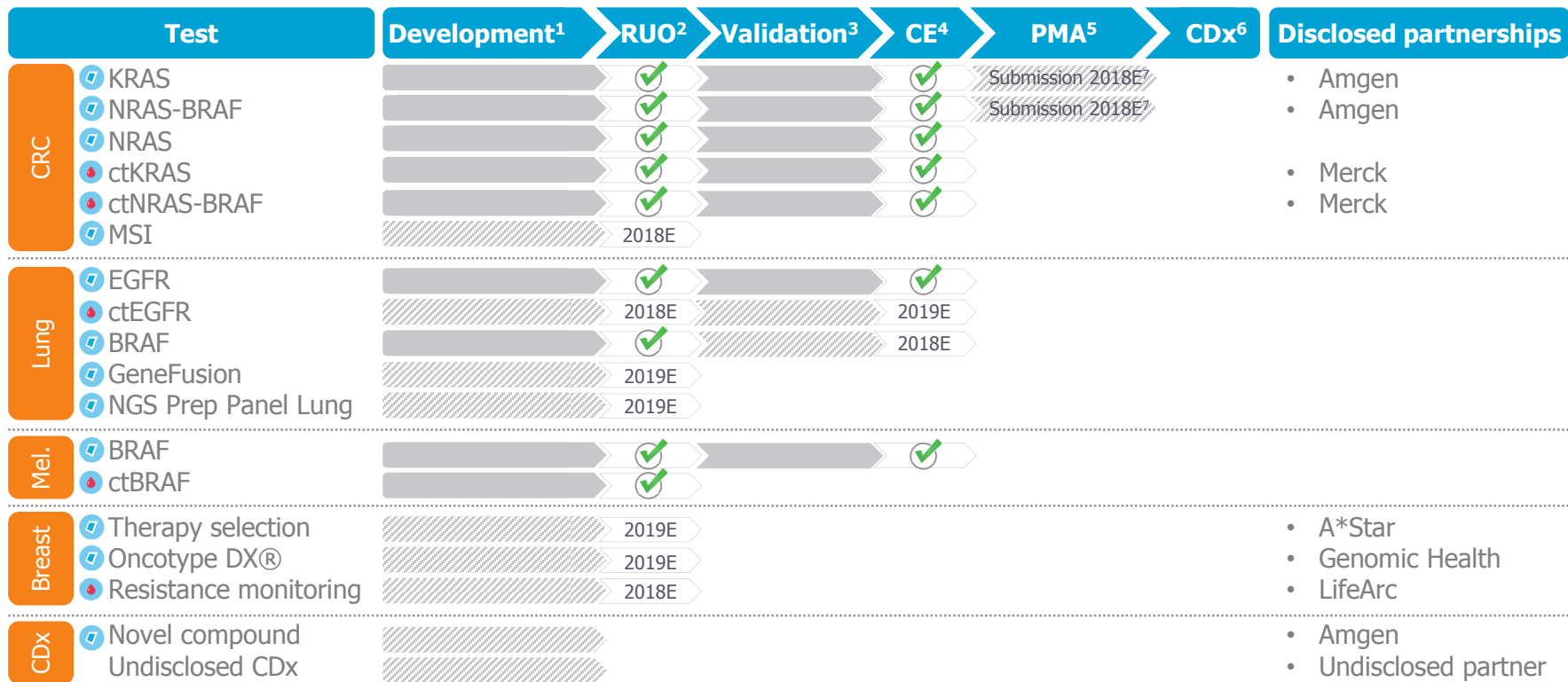
# Establishment of a US R&D center

- Rationale US R&D center (Raritan, New Jersey):
  - Support **execution of strategy** to accelerate menu expansion through predominantly CDx collaborations and assay content partnerships
  - Have access to a **US pool of R&D talent**
- Establishment result of **transfer** of R&D staff members (approx. 10 FTEs) from Janssen Diagnostics to Biocartis<sup>1</sup>
- Development experts joining Biocartis have **in-depth Idylla™ IVD assay development expertise**: successfully developed, amongst others, the Idylla™ Respiratory (IFV-RSV) Panel
- Furthermore, agreement includes:
  - Two-year transitional lease of laboratory and office space from Janssen
  - Acquisition of laboratory equipment
  - Ownership transfer of the Idylla™ Respiratory (IFV-RSV) Panel to Biocartis (including regulatory authorizations)



*Impression lab facilities Biocartis US R&D center*

# Rapidly expanding Idylla™ test menu (1/2)



completed

ongoing



= solid biopsy



= liquid biopsy


1. Generally includes analytical validation. 2. Research Use Only 3. Clinical validation. 4. CE-IVD. 5. Premarket approval process with US FDA. 6. Companion Diagnostic. 7. Submission of the Idylla™ RAS PMA (Pre-Market Approval) documentation with the US FDA around year-end, subject to feedback from US FDA interactions. Note: Launch dates are indicative. Overview is subject to change in amongst others prioritization of test development by Biocartis and/or partners driven by commercial, partnering and operational considerations

# Rapidly expanding Idylla™ test menu (2/2)

## Further expansion oncology menu

- Continued menu expansion through own developments and partnerships:
  - 1 Menu expansion within current cancer areas focused on, e.g.:
    - Complementary **novel assays** (including NGS Prep Panels)
    - **Companion Diagnostics** of existing and novel tests
    - (Exclusive) **third party diagnostic content**
  - 2 Into additional:
    - Cancer indications (e.g. **bladder** and **prostate cancer**)
    - Treatment options (e.g. **immuno-oncology**)

## Infectious disease menu

- **On market tests:**
  - Idylla™ IFV-RSV Panel (CE-IVD, RUO<sup>1</sup> and 510k<sup>2</sup>)
  - Ebola (EUA<sup>3</sup>)
- **Sepsis host response** partnership with  **Immunexpress**
  - Aimed at development and commercialization of Immunexpress' SeptiCyte™ test<sup>4</sup> for use on Idylla™
  - SeptiCyte™ LAB test, recently received 510(k) clearance for use on a manual PCR instrument
  - Parties will co-develop the SeptiCyte™ Idylla™ test
  - Immunexpress will take the lead in commercialization, initial focus on US and Europe
- Further menu expansion with focus on **syndromic panels** & **bloodstream infections tests** that are to be (co-)developed and commercialized through **partnerships**

# Up to EUR 24m provided by the EIB financing facility for infectious disease projects

## Facility details

- Up to EUR 24m debt financing facility. Can be used to part-finance up to 50% of further investments in infectious diseases diagnostics solutions on Idylla™
- Consisting of two tranches, each with a minimum of EUR 6m
- First tranche to draw within 12 months following signing and second tranche within 18 months from disbursement first tranche
- Duration of up to six years as of the disbursement of the first tranche. Biocartis is entitled to forgo drawdowns on the facility
- Facility enjoys a senior ranking and security position comparable to the Company's existing multi-purpose credit facility
- Supported by InnovFin – EU Finance for Innovators' Infectious Diseases Finance Facility, with the financial backing of the European Union under Horizon 2020 Financial Instruments



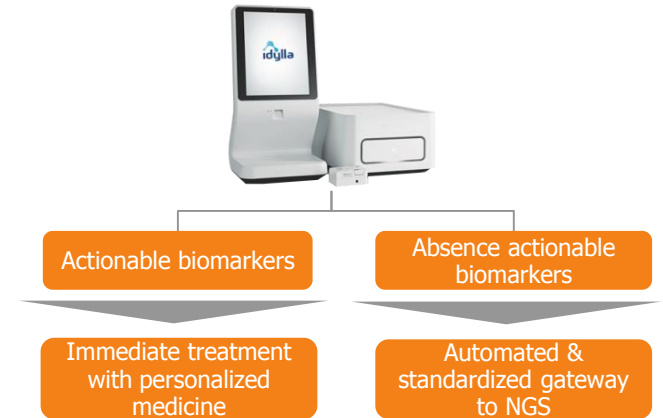
### **EIB Vice-President Ambroise Fayolle, reacted:**

*"R&D is an indispensable part of the healthcare sector, but also the one with the highest risk, which can sometimes make it challenging to finance. Thanks to the support of the European Commission under the InnovFin program, the European Investment Bank is very glad to provide financing to Biocartis in rolling out their Idylla™ technology that has the potential to significantly speed up the identification and diagnosis of infectious diseases, enabling amongst others faster and better treatment decisions. This is what European innovation is all about."*

# NGS Prep Panel Lung completes lung menu

Idylla™ lung menu	Application
EGFR	<ul style="list-style-type: none"> <li>Panel of &gt;50 EGFR mutations as included in clinical guidelines</li> <li>Solid and liquid biopsy version required as tumor tissue is often not available</li> <li>Clinical guidelines<sup>1</sup> recommend EGFR testing for all NSCLC patients<sup>1</sup></li> </ul>
ctEGFR	
GeneFusion Panel <sup>3</sup>	<ul style="list-style-type: none"> <li>Clinical guidelines<sup>1</sup> recommend ALK and ROS1 testing for all NSCLC patients<sup>2</sup></li> </ul>
BRAF	<ul style="list-style-type: none"> <li>Panel of 7 BRAF mutations</li> <li>Clinical guidelines<sup>1</sup> recommend BRAF testing for patients who are negative for EGFR, ALK and ROS1</li> </ul>
NGS Prep Panel Lung	<ul style="list-style-type: none"> <li>A multiplexed sequencing panel for additional/infrequent markers</li> <li>Becoming accepted by international societies and increasingly mentioned in guidelines<sup>1</sup></li> </ul>

- **Complete menu** for lung cancer testing from clinically **actionable** to clinically **oriented** targets starting from a **minimal sample input**



- **Fastest time-to-therapy** for frequent 'actionable mutations' as recommended by clinical guidelines



# NGS sample prep & target enrichment on Idylla™

Traditional NGS workflow



- Isolate genomic material from clinical sample
- Quantify genomic material via qPCR



- Target amplification via PCR



- Sample indexing and tagging
- Purification



- Pool libraries
- Sequencing
- Data analysis

## Summary traditional workflow

4

#labs

6

#auxilliary devices

6h

Hands-on time<sup>1</sup>

3

#PCR reactions

18

#samples/  
batch

12h

Turnaround time<sup>1</sup>



## Idylla™ NGS Prep Panels:

- **Standardization** and **automation** of FFPE sample prep and target enrichment workflow
- **Compatible** with mainstream desktop sequencers
- **Minimization** of required amount **FFPE sample input**
- Maintains **sample pooling flexibility**
- Biocartis NGS panel design makes overall NGS workflow more **cost-effective**
- Offers **partnership possibilities** for third party NGS panel content and CDx



# 2018 Outlook

# Guidance 2018



Maintain installed base growth at 250-275 new instrument placements, to a total of around 900-925 Idylla™ instruments by year-end 2018





Target of doubling commercial cartridge volume in 2018



Targeted cash position in the range of EUR 50m – EUR 60m by 2018 year-end (excluding drawdowns on the Company's multiple purpose credit facility)

# Menu newsflow 2018

Area	Test	Timing	Partner
Colorectal cancer	<ul style="list-style-type: none"> <li>• Launch of the <b>Idylla™ MSI Assay</b> (RUO<sup>1</sup>)</li> <li>• Submission of <b>Idylla™ RAS PMA<sup>2</sup></b> documentation with the US FDA, subject to feedback from US FDA interactions</li> </ul>	<ul style="list-style-type: none"> <li>• H2 2018</li> <li>• Around year-end</li> </ul>	
Lung cancer	<ul style="list-style-type: none"> <li>• Launch of the <b>Idylla™ ctEGFR Assay</b> (RUO<sup>1</sup>)</li> <li>• <b>CE-marking</b> of the <b>Idylla™ BRAF Mutation Test<sup>3</sup></b></li> </ul>	<ul style="list-style-type: none"> <li>• H2 2018</li> <li>• H2 2018</li> </ul>	
Breast cancer	<ul style="list-style-type: none"> <li>• Launch of the <b>Idylla™ Resistance Monitoring Test</b> (RUO<sup>1</sup>)</li> </ul>	<ul style="list-style-type: none"> <li>• H2 2018</li> </ul>	

# Financial calendar 2018

- Publication annual report 2017            5 April 2018
- Q1 2018 business update                26 April 2018
- Annual General Meeting                 11 May 2018
- H1 2018 results                         6 September 2018
- Q3 2018 business update               15 November 2018

# Q&A

