

# PAION AG

Germany / Biotechnology  
 Frankfurt Prime Standard  
 Bloomberg: PA8 GR  
 ISIN: DE000A0B65S3

Annual Report

**RATING**

**PRICE TARGET**

Return Potential

Risk Rating

**BUY**

**€ 4.30**

92.4%

High

## REMIMAZOLAM FILING EXPECTED 2018 IN JAPAN; Q4/18–Q1/19 IN U.S.

Highlights of 2017 were the completion of the programme of phase III trials with remimazolam in the U.S. and the conclusion of a license agreement with Mundipharma for the development and commercialisation of remimazolam in Japan. U.S. partner Cosmo's guidance on the timing of filing for regulatory approval of remimazolam in procedural sedation in the U.S. is now Q4/18-Q1/19 (previously: H2/18). Meanwhile Mundipharma expects filing in general anesthesia in 2018 (previously: mid-2018). Our previous forecast assumed filing milestones in both the U.S. and Japan and first revenues in Japan in 2018. In line with guidance, we now assume only the Japanese filing milestone in 2018 and have pushed back first Japanese revenues and the US filing milestone into 2019. We expect the end 2017 cash position of €24.8m together with tax credits from the British tax authorities and milestones from regulatory approval in the U.S. and Japan to cover planned activity until H2/19. This includes filing in the U.S. and Japan as well as the EU phase III study of remimazolam in the indication general anesthesia. However, filing for approval in the EU in this indication is expected to require an additional €15m which will be only partially covered by potential further milestone payments. We have inserted a further €5m capital raise into our model in 2019. These adjustments cause us to lower our price target to €4.30 (previously: €4.40). We maintain our Buy recommendation.

### U.S. clinical development of remimazolam in procedural sedation complete

In March 2017 PAION announced positive results of a U.S. clinical safety trial with remimazolam in high risk patients undergoing colonoscopy. These results were followed in June by positive headline data from the second pivotal U.S. phase III trial of remimazolam in bronchoscopy patients. Efficacy and efficiency improvements in this trial were comparable to the results of the pivotal U.S. Phase III trial in colonoscopy patients published in 2016. In 2017 PAION conducted additional Phase I studies in consultation with the FDA to further assess the abuse potential of remimazolam. (p.t.o.)

### FINANCIAL HISTORY & PROJECTIONS

|                    | 2014   | 2015   | 2016    | 2017   | 2018E   | 2019E   |
|--------------------|--------|--------|---------|--------|---------|---------|
| Revenue (€m)       | 3.46   | 0.07   | 4.26    | 5.81   | 3.00    | 17.64   |
| Y-o-y growth       | -18.3% | n.a.   | n.a.    | 36.4%  | -48.4%  | 487.9%  |
| EBIT (€m)          | -11.64 | -34.09 | -25.08  | -15.87 | -16.75  | -6.26   |
| EBIT margin        | 0.0    | 1.0%   | 2.0%    | 3.0%   | 4.0%    | 5.0%    |
| Net income (€m)    | -9.10  | -28.21 | -20.12  | -12.09 | -13.73  | -3.05   |
| EPS (diluted) (€)  | -0.23  | -0.56  | -0.38   | -0.20  | -0.22   | -0.05   |
| DPS (€)            | 0.00   | 0.00   | 0.00    | 0.00   | 0.00    | 0.00    |
| FCF (€m)           | -12.07 | -26.32 | -11.78  | -17.75 | -12.93  | -2.18   |
| Net gearing        | -94.1% | -91.9% | -120.7% | -98.5% | -100.2% | -105.7% |
| Liquid assets (€m) | 58.91  | 32.68  | 30.11   | 24.84  | 13.91   | 16.73   |

### RISKS

Risks to our price target include but are not limited to: drug development, finding development partners with favourable terms, financial, and legal risks.

### COMPANY PROFILE

PAION is a specialty pharmaceutical company headquartered in Aachen (Germany) with operations in Cambridge (United Kingdom). PAION's lead substance, remimazolam, is an intravenous ultra-short-acting benzodiazepine anaesthetic that is currently in Phase III clinical development for procedural sedation.

### MARKET DATA

As of 09 Apr 2018

|                         |               |
|-------------------------|---------------|
| Closing Price           | € 2.23        |
| Shares outstanding      | 61.12m        |
| Market Capitalisation   | € 136.60m     |
| 52-week Range           | € 2.21 / 3.60 |
| Avg. Volume (12 Months) | 186,957       |

| Multiples  | 2017 | 2018E | 2019E |
|------------|------|-------|-------|
| P/E        | n.a. | n.a.  | n.a.  |
| EV/Sales   | 19.0 | 36.7  | 6.3   |
| EV/EBIT    | n.a. | n.a.  | n.a.  |
| Div. Yield | 0.0% | 0.0%  | 0.0%  |

### STOCK OVERVIEW



### COMPANY DATA

As of 31 Dec 2017

|                      |          |
|----------------------|----------|
| Liquid Assets        | € 28.73m |
| Current Assets       | € 35.13m |
| Intangible Assets    | € 2.65m  |
| Total Assets         | € 37.58m |
| Current Liabilities  | € 10.21m |
| Shareholders' Equity | € 27.37m |

### SHAREHOLDERS

|                       |       |
|-----------------------|-------|
| Cosmo Pharmaceuticals | 9.1%  |
| TIAA-CREF             | 3.0%  |
| Free Float            | 87.9% |



Two studies examined the potential for abuse of remimazolam as a knock-out cocktail in combination with alcohol and its potential for abuse intranasally. In November 2017 the FDA stated that this abuse liability program was sufficient to provide the necessary data regarding the abuse potential of the drug. This statement from the FDA marked the completion of clinical development of remimazolam in procedural sedation in the U.S.

**December 2017 conclusion of partnership with Mundipharma for Japan** PAION's previous Japanese marketing partner, Ono, completed a pivotal phase III study of remimazolam in 2013. But in 2014 Ono announced that for strategic reasons it had abandoned plans to file for marketing approval of remimazolam for general anesthesia. Following the transfer of know-how and technology from Ono to PAION in 2015, the Japanese Pharmaceuticals and Medical Devices Agency (PMDA) stated in 2016 that they considered the non-clinical and clinical data package for remimazolam to be complete for filing for the indication "induction and maintenance of general anesthesia." In December 2017, PAION granted a license to Mundipharma for the development and commercialisation of remimazolam in Japan. Mundipharma is a global network of independent associated companies with a presence in over 120 countries and annual revenues of over USD3.4bn. Mundipharma regards itself as a global leader in pain medicine, but also has a significant presence in the therapeutic areas of respiratory, oncology and biosimilars.

The agreement with Mundipharma stipulates a €1m upfront payment to PAION, additional regulatory and commercial milestone payments of up to €25m and royalties ranging from low double-digits to over 20%. Under the terms of the agreement, Mundipharma has the right and obligation to further develop remimazolam in all indications in Japan with PAION's support. Mundipharma will bear all costs for market authorisation and distribution.

**Phase III EU study of remimazolam in general anesthesia to start in H2/2018** In early 2016 PAION discontinued a phase III study of remimazolam in the EU with cardiac surgery patients in the indication general anesthesia. The trial was discontinued due to recruitment challenges caused by the study's complex design. During the remainder of 2016 PAION planned the resumption of clinical development of remimazolam in the EU. In 2017 PAION conducted a Phase I trial to define key elements and sample size calculation for a new Phase III trial. Based on advice from the European authority EMA management currently expects approximately 450 to 500 patients will be required for the EU Phase III study in general anesthesia. The study design is expected to be in general surgery resembling the successfully completed Phase III programme in general anesthesia in Japan, but in sicker patients, where the medical need to reduce hypotensive events is greater. The study is expected to start in H2/2018.

Besides Cosmo for the U.S. and Mundipharma for Japan, PAION has concluded regional partnerships for remimazolam in countries including China, South Korea, Canada, Russia (CIS) and Turkey. The regional partners continue development and preparatory filing activities as summarised in figure 1.

**Figure 1: Partnerships agreements for Canada, China, Russia, South Korea and Turkey**

| Country     | Partner           | Indications         | Current status  |
|-------------|-------------------|---------------------|---|
| Canada      | Pharmascience     | Lead indication: PS | Plans to file for market approval based on U.S. dossier                                     |
| China       | Yichang Humanwell | GA and PS           | To conduct phase II study in GA and phase III study in PS                                   |
| Russia      | R-Pharm           | Lead indication: GA | Completion of phase III study in GA H1/18. Filing for market approval end 2018              |
| South Korea | Hana Pharm        | Lead indication: GA | Has started a phase III study in GA   |
| Turkey      | TR-Pharm          | GA and PS           | Plans to file for market approval based on U.S. or Japanese dossier (whichever comes first) |

Source: PAION



Figure 2 shows 2017 results and management guidance for 2018. The 2017 results were close to our forecasts. Revenue in both 2017 and 2016 stemmed from the upfront payment received from Cosmo in 2016. The €5.8m recognised in 2017 was dependent on the progress of certain development components. The €5.6m decrease in R&D expenditure was due mainly to lower costs for phase III studies which were partially offset by higher costs for phase I studies. SG&A costs were higher in 2016 than in 2017 because of preparations for capital raising measures which were ultimately not conducted and higher costs related to the initiation and preparation of license agreements. The tax credits relate to the partial reimbursement of R&D expenses by the British tax authorities. The reduction in 2017 relative to 2016 stems from the decrease in development expenses for remimazolam.

**Figure 2: 2018 guidance and 2017 results vs. our forecasts**

| in EURm            | FY/18G        | FY/17A | FY/17E | Delta | FY/16A | Delta  |
|--------------------|---------------|--------|--------|-------|--------|--------|
| Revenue*           | ~€3m          | 5.81   | 5.73   | 1.4%  | 4.26   | 36.3%  |
| R&D expenses       | ~€15-€17m     | 17.85  | 19.00  | -6.0% | 23.41  | -23.7% |
| S,G&A expenses     | ~€3.5-€4m     | 3.83   | 3.75   | -     | 5.13   | -      |
| EBT                | n.a.          | -15.85 | -16.87 | -     | -25.06 | -      |
| Tax credit         | ~€3m          | 3.76   | 3.75   | 0.3%  | 4.94   | -23.9% |
| Net income         | ~€-12 - €-15m | -12.09 | -13.12 | -     | -20.12 | -      |
| margin             | neg.          | neg.   | neg.   | -     | neg.   | -      |
| EPS (dil., in EUR) | €-0.20-€-0.25 | -0.20  | -0.21  | -     | -0.38  | -      |

\* including other operating income such as milestone payments

Source: PAION, First Berlin Equity Research estimates

Management's expectation of revenues of €3m for 2018 relates to the licensing agreement with Mundipharma for Japan. €1m of this figure stems from the upfront payment received from Mundipharma in January 2018 and €2m from the planned regulatory filing for remimazolam in the indication general anesthesia scheduled for later this year. PAION's U.S. partner Cosmo currently expects to file for approval of remimazolam in procedural sedation in the U.S. in Q4/18 or Q1/19.

Operating cash outflow during 2017 was €17.7m (2016: an outflow of €11.6m). The outflow was partially covered by two equity capital raises which generated a gross €13m. €5m were raised through a rights issue in February 2017. A further €8.0m was placed with a US investor in July 2017. The U.S. investor may subscribe for an additional up to 2.8 million new shares by 30 April this year. If the U.S. investor does not subscribe to a minimum of 0.9 million new shares by 30 April 2018, under certain conditions PAION can request that the U.S. investor makes this minimum investment. The offer price will be at a 5% discount to the volume-weighted average Xetra price.

#### **Priority is approval for remimazolam in as many countries/applications as possible**

Management has confirmed that the company's main priority over the next few years is to gain regulatory approval for remimazolam in as many countries for as many indications as possible. PAION estimates the peak sales opportunity for remimazolam at over USD500m annually for each of the three indications, procedural sedation, general anesthesia and intensive care unit (ICU) sedation. The two main incumbent products in these indications are midazolam which is used mainly in conscious sedation and propofol which is used mainly in deep sedation. We believe that remimazolam's advantages over midazolam and propofol will enable it to gain market share from both products.

**Advantages over incumbent products midazolam and propofol** On the key US procedural sedation market propofol is most widely used in the eastern states and midazolam in the western part of the country. As we wrote in our studies of 5 July 2016 and 24 October 2016, data from Paion's U.S. phase III study with remimazolam in procedural sedation suggested that the time saved through using remimazolam instead of midazolam is likely to exceed twenty minutes. This is a substantial time saving on a typical colonoscopy procedure time of 30-60 minutes.



The US colonoscopy market is currently seeing trends towards lower reimbursement per procedure and “bundling” or a contracted flat fee for the total cost of each colonoscopy. In this environment, physicians are looking for ways to maintain their income. Remimazolam’s advantage over midazolam of shorter onset/offset times and over its other main prospective competing product, propofol, of not requiring an anesthetist is a clear potential answer to this problem.

The current standard of care for induction of general anesthesia is propofol. A major problem with propofol is that it causes hypotension. During surgery vasopressors are routinely used to maintain blood pressure in the normal range and counteract pronounced blood pressure decreases. Vasopressors are however known to impair the microcirculation in vital organs and thus have a negative effect on short, mid and long-term outcomes. In the course of Ono’s phase II/III trial with remimazolam for general anesthesia, remimazolam and propofol were intravenously administered to 375 patients. Two remimazolam groups received induction doses of 6 mg/kg/h or 12 mg/kg/h, 150 subjects per group and 75 patients received a standard dose of propofol. The incidence rates of decrease in blood pressure were 35.3%, 34.7% and 60.0% in 6 mg/kg/h and 12 mg/kg/h of remimazolam and propofol groups, respectively. This suggests that remimazolam has a clinically meaningfully lower cardiodepressive effect compared with propofol. The forthcoming E.U. phase III trial of remimazolam in the indication general anesthesia has been designed to confirm this.

**Long term plan to make PAION an acute/critical care specialist** In the conference call accompanying the 2017 results, management outlined plans for PAION beyond the international roll-out of remimazolam. The intention is to move the company out of the small-cap and into the mid-cap space by turning PAION into an acute/critical care specialist. Management intends to achieve this through forward integration in selected regions and partnering in others. Meanwhile, management intends to enrich the product portfolio to encompass a range of products used by anesthesiologists and emergency physicians. At present, these plans are still at an early stage and we have not taken account of them in our forecasts.

Figure 3 shows changes to our forecasts. U.S. partner Cosmo’s guidance on the timing of filing for regulatory approval of remimazolam in procedural sedation in the U.S. is now Q4/18-Q1/19 (previously: H2/18). Meanwhile Mundipharma expects filing in general anesthesia in 2018 (previously: mid-2018). Our previous 2018 forecast assumed filing milestones in both the U.S. and Japan and first revenues in Japan. In line with company guidance, we now assume only the Japanese upfront payment/filing milestone in 2018 and have pushed back first Japanese revenues and the U.S. filing milestone into 2019. Our previous 2019 forecast assumed first revenues in the U.S. We have now moved these to 2020.

**Figure 3: Changes to our forecasts**

| in EURm                | 2018  |         |        | 2019   |        |        |
|------------------------|-------|---------|--------|--------|--------|--------|
|                        | Old   | New     | Δ      | Old    | New    | Δ      |
| Revenues               | 13.26 | 0.00    | n.a.   | 3.00   | 1.84   | -38.8% |
| Other operating income | 20.00 | 3.00    | -85.0% | 11.25  | 15.80  | 40.4%  |
| Total revenues         | 33.26 | 3.00    | -91.0% | 14.25  | 17.64  | 23.8%  |
| EBIT                   | 0.63  | -16.75  | n.a.   | -8.27  | -6.26  | -24.3% |
| margin                 | neg.  | -558.3% | -      | -58.0% | -35.5% | -      |
| Net income             | 3.33  | -13.73  | n.a.   | -5.30  | -3.05  | -42.5% |
| margin                 | 25.1% | -457.8% | -      | -37.2% | -17.3% | -      |
| EPS (dil., in EUR)     | 0.05  | -0.22   | n.a.   | -0.08  | -0.05  | -42.7% |

Source: First Berlin Equity Research estimates

**Buy recommendation maintained but price target lowered to €4.30 (previously: €4.40)**

We expect the end 2017 cash position of €24.8m together with tax credits from the British tax authorities and milestones from regulatory approval in the U.S. and Japan to cover planned activity until H2/19. This includes filing in the U.S. and Japan as well as the EU phase III study of remimazolam in the indication general anesthesia. However filing for approval in the EU in this indication is expected to require an additional €15m which will be only partially covered by potential further milestone payments. We have inserted a further €5m capital raise into our model in 2019. These adjustments cause us to lower our price target from €4.40 to €4.30. We maintain our Buy recommendation.



## VALUATION MODEL

Figure 4: Pipeline valuation model

| Compound              | Project (1)     | Present Value  | Patient Pop | Treatment Cost | Market Size | Market Share | Peak Sales | PACME Margin (2) | Discount Factor | Patent Life (3) | Time to Market |
|-----------------------|-----------------|----------------|-------------|----------------|-------------|--------------|------------|------------------|-----------------|-----------------|----------------|
| Remimazolam           | PS EU           | €90.6M         | 25,300K     | €14            | €348.5M     | 25%          | €117.3M    | 30%              | 15%             | 15              | 3 Years        |
| Remimazolam           | PS US           | €150.3M        | 20,000K     | €20            | €400.0M     | 50%          | €258.7M    | 20%              | 15%             | 13              | 2 Years        |
| Remimazolam           | PS CAN          | €7.1M          | 1,056K      | €20            | €21.1M      | 50%          | €13.7M     | 18%              | 15%             | 13              | 2 Years        |
| Remimazolam           | GA EU           | €198.3M        | 29,000K     | €40            | €1,160.0M   | 20%          | €312.2M    | 30%              | 15%             | 15              | 3 Years        |
| Remimazolam           | GA US           | €84.1M         | 23,925K     | €40            | €957.0M     | 20%          | €247.6M    | 20%              | 15%             | 13              | 4 Years        |
| Remimazolam           | GA JAP          | €92.2M         | 10,000K     | €40            | €400.0M     | 25%          | €134.6M    | 8%               | 15%             | 15              | 1 Year         |
| Remimazolam           | GA CHN          | €18.1M         | 51,000K     | €28            | €1,405.0M   | 10%          | €189.1M    | 10%              | 15%             | 15              | 4 Years        |
| Remimazolam           | PS CHN          | €9.9M          | 33,260K     | €10            | €346.5M     | 10%          | €46.6M     | 10%              | 15%             | 15              | 3 Years        |
| Remimazolam           | GA KOR          | €7.4M          | 3,750K      | €28            | €103.3M     | 25%          | €34.8M     | 10%              | 5%              | 15              | 3 Years        |
| Remimazolam           | GA CIS/MENA/TUR | €67.5M         | 55,247K     | €28            | €1,566.6M   | 10%          | €210.8M    | 12%              | 15%             | 15              | 2 Years        |
| Remimazolam           | ICU US          | €15.7M         | 1,561K      | €250           | €390.2M     | 25%          | €126.2M    | 20%              | 15%             | 13              | 6 Years        |
| Remimazolam           | ICU EU          | €33.3M         | 2,439K      | €167           | €406.5M     | 25%          | €136.8M    | 20%              | 15%             | 15              | 5 Years        |
| Remimazolam           | ICU Japan       | €4.2M          | 606K        | €167           | €101.0M     | 25%          | €34.0M     | 18%              | 15%             | 15              | 6 Years        |
| <b>PACME PV</b>       |                 | <b>€778.6M</b> |             |                |             |              |            |                  |                 |                 |                |
| <b>Costs PV (4)</b>   |                 | <b>€578.2M</b> |             |                |             |              |            |                  |                 |                 |                |
| <b>NPV</b>            |                 | <b>€200.4M</b> |             |                |             |              |            |                  |                 |                 |                |
| Milestones PV         |                 | €44.0M         |             |                |             |              |            |                  |                 |                 |                |
| Pro forma net cash    |                 | €31.0M         |             |                |             |              |            |                  |                 |                 |                |
| Fair Value            |                 | €275.4M        |             |                |             |              |            |                  |                 |                 |                |
| Pro forma share count |                 | 64,324K        |             |                |             |              |            |                  |                 |                 |                |
| <b>Price Target</b>   |                 | <b>€4.28</b>   |             |                |             |              |            |                  |                 |                 |                |

1) A project typically refers to a specific indication or, where necessary or relevant, a combination between indication and geographic market

PS EU = Procedural Sedation in the EU

PS US = Procedural Sedation in the US

PS CAN = Procedural Sedation in Canada

GA EU = General Anaesthesia in the EU

GA US = General Anaesthesia in the US

GA JAP = General Anaesthesia in Japan

GA CHN = General Anaesthesia in China

GA KOR = General Anaesthesia in South Korea

GA CIS/MENA/TUR = General Anaesthesia in the Commonwealth of Independent States, Middle East & North Africa, and Turkey

ICU US = General Anaesthesia in Intensive Care Units in the US

ICU EU = General Anaesthesia in Intensive Care Units in the EU

Other projects: GGF2 (HF) and Solulin (HPH)

HF = Heart Failure

HPH = Haemophilia

2) PACME (Profit After Costs and Marketing Expenses) reflects the company's profit share on future revenues.

This share may be derived in the form of royalties (outsourced marketing/manufacturing) or operating EBITDA margin (in-house model), or some mix of both (depending on the specific parameters of partnership agreements)

3) Remaining patent life after the point of approval

4) Includes company-level R&D, G&A, Financing Costs, CapEx and working capital; COGS and S&M are factored into the PACME margin for each project

Source: First Berlin Equity Research

Figure 5: Changes to pipeline valuation model

|                             | Old            | New            | Delta        |
|-----------------------------|----------------|----------------|--------------|
| <b>NPV</b>                  | <b>€202.3M</b> | <b>€200.4M</b> | <b>-0.9%</b> |
| Milestones PV               | €32.2M         | €44.0M         | 36.6%        |
| Pro Forma Net Cash          | €44.4M         | €31.0M         | -30.2%       |
| Fair Value                  | €278.9M        | €275.4M        | -1.2%        |
| Diluted Share Count         | €63.4M         | €64.3M         | 1.5%         |
| <b>Fair Value Per Share</b> | <b>€4.40</b>   | <b>€4.28</b>   | <b>-2.7%</b> |

Source: First Berlin Equity Research



## INCOME STATEMENT

| All figures in EUR '000                      | 2014           | 2015           | 2016           | 2017           | 2018E          | 2019E         |
|--|----------------|----------------|----------------|----------------|----------------|---------------|
| <b>Net revenues</b>                          | 4              | 0              | 0              | 0              | 0              | 1,836         |
| <b>Other op. inc. (including milestones)</b> | 3,452          | 72             | 4,262          | 5,811          | 3,000          | 15,800        |
| <b>Total revenue</b>                         | 3,456          | 72             | 4,262          | 5,811          | 3,000          | 17,636        |
| <b>Cost of goods sold</b>                    | 4              | 11             | 0              | 0              | 0              | 0             |
| <b>Gross profit</b>                          | 3,452          | 61             | 4,262          | 5,811          | 3,000          | 17,636        |
| G&A  | 3,702          | 5,729          | 5,129          | 3,828          | 3,750          | 3,900         |
| R&D  | 11,799         | 29,385         | 23,408         | 17,854         | 16,000         | 20,000        |
| Other operating income (expense)             | 411            | 965            | -807           | -2             | 0              | 0             |
| <b>Operating income (EBIT)</b>               | <b>-11,639</b> | <b>-34,088</b> | <b>-25,082</b> | <b>-15,872</b> | <b>-16,750</b> | <b>-6,264</b> |
| Net financial result                         | 66             | 42             | 21             | 20             | 16             | 16            |
| <b>Pre-tax income (EBT)</b>                  | <b>-11,573</b> | <b>-34,046</b> | <b>-25,061</b> | <b>-15,852</b> | <b>-16,734</b> | <b>-6,248</b> |
| Income taxes                                 | 2,468          | 5,834          | 4,944          | 3,759          | 3,000          | 3,200         |
| <b>Net income / loss</b>                     | <b>-9,105</b>  | <b>-28,212</b> | <b>-20,118</b> | <b>-12,093</b> | <b>-13,734</b> | <b>-3,048</b> |
| <b>Diluted EPS</b>                           | <b>-0.23</b>   | <b>-0.56</b>   | <b>-0.38</b>   | <b>-0.20</b>   | <b>-0.22</b>   | <b>-0.05</b>  |
| <b>EBITDA</b>                                | <b>-11,327</b> | <b>-33,742</b> | <b>-25,029</b> | <b>-15,825</b> | <b>-16,700</b> | <b>-6,214</b> |
| <b>Ratios</b>                                |                |                |                |                |                |               |
| EBIT margin                                  | n.m.           | n.m.           | n.m.           | n.m.           | n.m.           | n.m.          |
| EBITDA margin                                | n.m.           | n.m.           | n.m.           | n.m.           | n.m.           | n.m.          |
| Net margin                                   | n.m.           | n.m.           | n.m.           | n.m.           | n.m.           | n.m.          |
| <b>Cash Coverage of Expenses</b>             |                |                |                |                |                |               |
| Cash / G&A                                   | 15.9x          | 5.7x           | 5.9x           | 6.5x           | 3.7x           | 4.3x          |
| Cash / R&D                                   | 5.0x           | 1.1x           | 1.3x           | 1.4x           | 0.9x           | 0.8x          |
| <b>Y-Y Growth</b>                            |                |                |                |                |                |               |
| Total revenue                                | -18.3%         | -97.9%         | 5851.0%        | 36.4%          | -48.4%         | 487.9%        |
| Operating income                             | n.m.           | n.m.           | n.m.           | n.m.           | n.m.           | n.m.          |
| Net income/ loss                             | n.m.           | n.m.           | n.m.           | n.m.           | n.m.           | n.m.          |



## BALANCE SHEET

| All figures in EUR '000                   | 2014          | 2015          | 2016          | 2017          | 2018E         | 2019E         |
|---|---------------|---------------|---------------|---------------|---------------|---------------|
| <b>Assets</b>                             |               |               |               |               |               |               |
| <b>Current assets, total</b>              | <b>63,032</b> | <b>40,051</b> | <b>35,128</b> | <b>29,357</b> | <b>17,631</b> | <b>20,924</b> |
| Cash and cash equivalents                 | 58,912        | 32,680        | 30,111        | 24,839        | 13,909        | 16,726        |
| Short-Term Investments                    | 0             | 0             | 0             | 0             | 0             | 0             |
| Receivables                               | 467           | 0             | 0             | 37            | 0             | 275           |
| Inventories                               | 0             | 0             | 0             | 0             | 0             | 0             |
| Other current assets                      | 3,653         | 7,371         | 5,017         | 4,481         | 3,722         | 3,922         |
| <b>Non-current assets, total</b>          | <b>3,516</b>  | <b>3,417</b>  | <b>2,855</b>  | <b>2,529</b>  | <b>2,089</b>  | <b>2,151</b>  |
| Property, plant & equipment               | 76            | 56            | 167           | 114           | 9             | 71            |
| Goodwill & other intangibles              | 3,440         | 3,362         | 2,688         | 2,415         | 2,080         | 2,080         |
| Other Assets                              | 0             | 0             | 0             | 0             | 0             | 0             |
| <b>Total assets</b>                       | <b>66,548</b> | <b>43,468</b> | <b>37,984</b> | <b>31,885</b> | <b>19,720</b> | <b>23,074</b> |
| <b>Shareholders' equity &amp; debt</b>    |               |               |               |               |               |               |
| <b>Current Liabilities, Total</b>         | <b>3,924</b>  | <b>7,901</b>  | <b>13,040</b> | <b>6,656</b>  | <b>5,834</b>  | <b>7,246</b>  |
| Convertible bond                          | 0             | 0             | 0             | 0             | 0             | 0             |
| Short-term debt                           | 0             | 0             | 0             | 0             | 0             | 0             |
| Accounts payable                          | 3,338         | 7,332         | 6,353         | 5,921         | 5,306         | 6,633         |
| Milestone                                 | 0             | 0             | 5,730         | 0             | 0             | 0             |
| Provisions                                | 306           | 224           | 555           | 391           | 0             | 9             |
| Other current liabilities                 | 280           | 344           | 403           | 344           | 528           | 604           |
| <b>Longterm liabilities, total</b>        | <b>17</b>     | <b>6</b>      | <b>0</b>      | <b>0</b>      | <b>0</b>      | <b>0</b>      |
| Convertible bond                          | 0             | 0             | 0             | 0             | 0             | 0             |
| Long-term debt                            | 0             | 0             | 0             | 0             | 0             | 0             |
| Provisions                                | 0             | 0             | 0             | 0             | 0             | 0             |
| Deferred revenue                          | 17            | 6             | 0             | 0             | 0             | 0             |
| <b>Shareholders' equity</b>               | <b>62,607</b> | <b>35,562</b> | <b>24,943</b> | <b>25,229</b> | <b>13,886</b> | <b>15,828</b> |
| <b>Total consolidated equity and debt</b> | <b>66,548</b> | <b>43,468</b> | <b>37,984</b> | <b>31,885</b> | <b>19,720</b> | <b>23,074</b> |
| <b>Ratios</b>                             |               |               |               |               |               |               |
| Current ratio (x)                         | 16.06         | 5.07          | 2.69          | 4.41          | 3.02          | 2.89          |
| Quick ratio (x)                           | 16.06         | 5.07          | 2.69          | 4.41          | 3.02          | 2.89          |
| Net gearing                               | -94.1%        | -91.9%        | -120.7%       | -98.5%        | -100.2%       | -105.7%       |
| Book value per share (€)                  | 1.24          | 0.70          | 0.45          | 0.41          | 0.22          | 0.25          |
| Return on equity (ROE)                    | -24.0%        | -57.5%        | -66.5%        | -48.2%        | -70.2%        | -20.5%        |





## CASH FLOW STATEMENT

| All figures in EUR '000                | 2014           | 2015           | 2016           | 2017           | 2018E          | 2019E         |
|--|----------------|----------------|----------------|----------------|----------------|---------------|
| <b>Net result</b>                      | <b>-9,105</b>  | <b>-28,212</b> | <b>-20,118</b> | <b>-12,093</b> | <b>-13,734</b> | <b>-3,048</b> |
| Depreciation and amortization          | 93             | 125            | 759            | 347            | 50             | 50            |
| Changes in working capital             | 284            | 3,999          | 1,137          | -911           | -394           | 1,127         |
| Milestone                              | 0              | 0              | 5,730          | -5,730         | 0              | 0             |
| Net taxes received                     | -3,988         | -3,269         | 585            | 838            | 759            | -200          |
| Other items                            | 672            | 1,071          | 321            | -170           | 0              | 0             |
| <b>Operating cash flow</b>             | <b>-12,044</b> | <b>-26,287</b> | <b>-11,586</b> | <b>-17,720</b> | <b>-13,319</b> | <b>-2,071</b> |
| CAPEX                                  | -26            | -33            | -192           | -25            | 390            | -112          |
| <b>Free cash flow</b>                  | <b>-12,070</b> | <b>-26,320</b> | <b>-11,778</b> | <b>-17,745</b> | <b>-12,930</b> | <b>-2,183</b> |
| <b>Debt financing, net</b>             | <b>0</b>       | <b>0</b>       | <b>0</b>       | <b>0</b>       | <b>0</b>       | <b>0</b>      |
| <b>Convertible bond financing, net</b> | <b>0</b>       | <b>0</b>       | <b>0</b>       | <b>0</b>       | <b>0</b>       | <b>0</b>      |
| <b>Equity financing, net</b>           | <b>57,618</b>  | <b>22</b>      | <b>9,212</b>   | <b>12,494</b>  | <b>2,000</b>   | <b>5,000</b>  |
| Other changes in cash                  | 72             | 66             | -2             | -22            | 0              | 0             |
| <b>Net cash flows</b>                  | <b>45,620</b>  | <b>-26,232</b> | <b>-2,568</b>  | <b>-5,273</b>  | <b>-10,930</b> | <b>2,817</b>  |
| Cash, start of the year                | 13,292         | 58,912         | 32,680         | 30,111         | 24,839         | 13,909        |
| <b>Cash, end of the year</b>           | <b>58,912</b>  | <b>32,680</b>  | <b>30,111</b>  | <b>24,839</b>  | <b>13,909</b>  | <b>16,726</b> |
| <b>Y-Y Growth</b>                      |                |                |                |                |                |               |
| Operating cash flow                    | n.m.           | n.m.           | n.m.           | n.m.           | n.m.           | n.m.          |
| Free cash flow                         | n.m.           | n.m.           | n.m.           | n.m.           | n.m.           | n.m.          |
| EBITDA/share                           | n.m.           | n.m.           | n.m.           | n.m.           | n.m.           | n.m.          |

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| Report No.:    | Date of publication | Previous day closing price | Recommendation | Price target |
|----------------|---------------------|----------------------------|----------------|--------------|
| Initial Report | 2 April 2012        | €0.79                      | Buy            | €2.00        |
| 2...33         | ↓                   | ↓                          | ↓              | ↓            |
| 34             | 14 February 2017    | €2.45                      | Buy            | €4.60        |
| 35             | 27 March 2017       | €2.19                      | Buy            | €4.40        |
| 36             | 4 July 2017         | €3.04                      | Buy            | €4.40        |
| 37             | Today               | €2.23                      | Buy            | €4.30        |

**Authored by: Simon Scholes, Analyst**

**Company responsible for preparation:**

**First Berlin Equity Research GmbH**

Mohrenstraße 34  
10117 Berlin

Tel. +49 (0)30 - 80 93 96 94 Fax +49 (0)30 - 80 93 96 87

info@firstberlin.com

www.firstberlin.com

**Person responsible for forwarding or distributing this financial analysis: Martin Bailey**

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