UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 6-K

REPORT OF FOREIGN PRIVATE ISSUER PURSUANT TO RULE 13a-16 OR 15d-16 UNDER THE SECURITIES EXCHANGE ACT OF 1934

For the month of May 31, 2016

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Commission File Number: 001-36826

ADVANCED ACCELERATOR APPLICATIONS S.A.

(Exact name of registrant as specified in its charter)

20 rue Diesel
01630 Saint Genis Pouilly, France
(Address of principal executive office)

Indicate by check mark whether the registrant files or will file annual reports under cover of Form 20-F or Form 40-F:

Form 20-F X Form 40-F _____

Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulation S-T Rule 101(b)(1):

Yes _____ No X

Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulation S-T Rule 101(b)(7):

Yes _____ No X

SIGNATURE

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

ADVANCED ACCELERATOR APPLICATIONS S.A.

By: /s/ Heinz Mäusli
Name: Heinz Mäusli
Title: Chief Financial Officer

Date: May 31, 2016

ADVANCED ACCELERATOR APPLICATIONS S.A.

EXHIBIT INDEX

Exhibit No.	Description
99.1	Press Release dated May 31, 2016 titled "Advanced Accelerator Applications reports 29.6% Sales Growth in the First Quarter of 2016"

PRESS RELEASE

Advanced Accelerator Applications Reports 29.6% Sales Growth in the First Quarter of 2016

Strengthens Commercial Platform for Launch of Somakit and Lutathera

First Quarter Highlights:

- Sales for the first quarter of 2016 increased 29.6% compared to the first quarter of 2015
- Purchased 100% of the IDB Group to strengthen AAA's commercial positioning of Lutathera
- Entered into a non-exclusive agreement with Zevacor for the preparation and delivery of SomaKit-TATE in the US
- Signed an exclusive licensing agreement with Johns Hopkins University to develop and market PSMA receptor ligand in prostate cancer for clinical therapeutic and diagnostic purposes

May 31, 2016, Saint-Genis-Pouilly, France - Advanced Accelerator Applications S.A. (NASDAQ:AAAP) ("AAA" or "the Company"), an international specialist in Molecular Nuclear Medicine (MNM), today announced its financial results for the first quarter of 2016.

Mr. Stefano Buono, AAA's CEO, commented, "Our continued sales momentum provides a strong foundation for the commercial launches of both Somakit and Lutathera, as well as the expansion of our theragnostic franchise as a whole." Mr. Buono continued, "We are committed to continuing to deliver improved outcomes for patients with unmet medical needs through our specialized expertise in the development and production of molecular nuclear medicines, and the accomplishments of this past quarter underscore the progress we are making to that end."

First Quarter 2016 Financial Results

Total sales for the first quarter of 2016 were €26.92 million (USD[(1)] 30.65 million), a 29.6% year-on-year increase compared to €20.76 million (USD[(1)] 23.64 million) in the prior year period.

Operating loss for the first quarter of 2016 was €1.12 million (USD[(1)] 1.28 million), compared to a loss of €1.58 million (USD[(1)] 1.80 million) for the prior year period.

For the first quarter of 2016, the Company reported a net loss of €2.98 million (USD[(1)] 3.39 million), compared to €5.90 million (USD[(1)] 6.72 million) for the prior year period.

For the first quarter of 2016, adjusted EBITDA (see corresponding reconciliation exhibit below) was €2.08 million (USD[(1)] 2.37 million), a 88.83% year-on-year increase compared to €1.10 million (USD[(1)] 1.25 million) for the prior year period.

(1) Translated solely for convenience into USD at the noon buying rate of €1.00=US$1.1386 at March 31, 2016.

Lutathera and Somakit Update

In January 2016, AAA announced the signing of an exclusive license agreement with Johns Hopkins University to develop PSMA receptor ligand in prostate cancer. This agreement enables AAA to broaden its pipeline with PSMA, which could be used to treat, image, monitor and stage prostate cancer, utilizing a clinical development strategy similar to Lutathera and Somakit.

Additional Lutathera NETTER-1 Phase III data were presented both on January 22, 2016 at the 2016 Gastrointestinal Cancer Symposium (ASCO GI) in San Francisco, California and on March 11, 2016 at the 13th Annual European Neuroendocrine Tumor Society (ENETS) conference in Barcelona, Spain.

Also in January 2016 AAA entered into a non-exclusive agreement with Zevacor for the preparation and delivery of SomaKit-TATE in the US.

The FDA extended the Prescription Drug User Fee Act (PDUFA) date for its Priority Review of the NDA for Somakit-TATE, AAA's investigational kit for neuroendocrine tumor diagnosis and follow-up. The PDUFA date has been extended to June 1, 2016.

About Lutathera and NETTER-1

Lutathera (or ^{177}Lu-DOTATATE) is a Lu-177-labeled somatostatin analogue peptide currently under development for the treatment of gastro entero pancreatic neuroendocrine tumors (GEP-NETs). This novel compound has received orphan drug designation from the European Medicines Agency (EMA) and the US Food and Drug Administration (FDA). Lutathera was also granted fast-track designation by the FDA in April 2015 for the treatment of inoperable progressive midgut NETs. The FDA provides fast-track designation to product candidates that treat serious conditions and fill an unmet medical need in order to facilitate their development and expedite their review. Lutathera is also currently administered on a compassionate use and named patient basis for the treatment of NETs in ten European countries and in the US under an Expanded Access Program (EAP).

Lutathera belongs to an emerging form of treatments called Peptide Receptor Radionuclide Therapy ("PRRT"), which involves targeting carcinoid tumors with radiolabeled somatostatin analogue peptides. Currently at the end of its Phase III development in its pivotal NETTER-1 study, Lutathera is the most advanced candidate in development for PRRT.

Lutathera's NETTER-1 study is the first Phase 3 international, multi-center, randomized, controlled trial evaluating 177Lu-DOTA0-Tyr3-Octreotate (Lutathera) in patients with inoperable, progressive, somatostatin receptor positive midgut NETs. 230 patients with Grade 1-2 metastatic midgut NETs (both functioning and not functioning) were randomized to receive Lutathera 7.4 GBq every 8 weeks (x4 administrations) versus Octreotide LAR 60 mg every 4-weeks. The primary endpoint was PFS per RECIST 1.1 criteria, with objective tumor assessment performed by an independent reading center every 12 weeks. Secondary objectives included objective response rate, overall survival, safety, and health-related quality of life.

The Phase 3 NETTER-1 study met its primary endpoint by demonstrating that treatment with Lutathera was associated with a statistically significant and clinically meaningful risk reduction of 79% in disease progression or death versus a treatment with a double dose of Octreotide LAR (hazard ratio 0.21, 95% CI: 0.13-0.33; p<0.0001). The median PFS in the Lutathera arm is not yet reached, whilst the median PFS in the Octreotide LAR 60 mg arm was 8.4 months.

Complete and partial responses (CR+PR) were reported in 18 patients (18%) in the Lutathera group versus 3 (3%) in the Octreotide LAR 60 mg group (p=0.0008). Although the overall survival (OS) data is not mature enough for a definitive analysis, the number of deaths was 14 in the Lutathera group and 26 in the Octreotide LAR 60 mg group (p=0.0043 at interim analysis), which suggests an improvement in OS. Only 5% of the patients (6 patients) experienced Lutathera dose modifying toxicity. Adverse events grade 3 or 4 neutropenia, thrombocytopenia and lymphopenia occurred in 1%, 2% and 9% of the patients in Lutathera arm vs. none in the control group.

The Phase 3 NETTER-1 study provides evidence of a clinically meaningful and statistically significant increase in PFS and objective response rate ("ORR"), and also suggests a survival benefit in patients with advanced midgut neuroendocrine tumors treated with Lutathera.

The adverse events observed for Lutathera in the NETTER-1 study were consistent with the results of Lutathera's previous Phase I-II study, with Lutathera demonstrating a favorable safety profile.

About Advanced Accelerator Applications

Advanced Accelerator Applications (AAA) is an innovative radiopharmaceutical company that develops, produces and commercializes Molecular Nuclear Medicine (MNM) products. AAA's lead therapeutic product candidate, Lutathera, is a novel MNM compound that AAA is currently developing for the treatment of Neuro Endocrine Tumors, a significant unmet medical need. Founded in 2002, AAA has its headquarters in Saint-Genis-Pouilly, France. AAA currently has 18 production and R&D facilities able to manufacture both diagnostics and therapeutic MNM products, and has over 440 employees in 13 countries (France, Italy, UK, Germany, Switzerland, Spain, Poland, Portugal, The Netherlands, Belgium, Israel, U.S. and Canada). AAA is listed on the Nasdaq Global Select Market under the ticker "AAAP". For more information please visit: www.adacap.com

About Molecular Nuclear Medicine ("MNM")

Molecular Nuclear Medicine is a medical specialty using trace amounts of active substances, called radiopharmaceuticals, to create images of organs and lesions and to treat various diseases, like cancer. The technique works by injecting targeted radiopharmaceuticals into the patient's body that accumulate in the organs or lesions and reveal specific biochemical processes. Molecular Nuclear Diagnostics employs a variety of imaging devices and radiopharmaceuticals. PET (Positron Emission Tomography) and SPECT (Single Photon Emission Tomography) are highly sensitive imaging technologies that enable physicians to diagnose different types of cancer, cardiovascular diseases, neurological disorders and other diseases in their early stages.

Reconciliation of adjusted EBITDA to net loss for the year from continuing operations for the three months ended March 31, 2016

	In USD thousands	Three months ended in EURO thousands	
	03.31.2016	03.31.2016	03.31.2015
Net loss for the period from continuing operations	(3,388)	(2,976)	(5,903)
Adjustments:			
Finance income (including changes in fair value of contingent consideration)	(1,484)	(1,303)	(14)
Finance costs (including changes in fair value of contingent consideration)	3,963	3,481	3,801
Income taxes	(367)	(322)	535
Depreciation and amortization	3,642	3,199	2,682
Adjusted EBITDA	**2,367**	**2,079**	**1,101**
Sales	30,650	26,919	20,764
Adjusted EBITDA margin	**7.72%**	**7.72%**	**5.30%**

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(1) Translated solely for convenience into dollars at the noon buying rate of €1.00=US$1.1386 at March 31, 2016.

Cautionary Statement Regarding Forward-Looking Statements

This press release may contain forward-looking statements. All statements, other than statements of historical facts, contained in this press release, including statements regarding the Company's strategy, future operations, future financial position, future revenues, projected costs, prospects, plans and objectives of management, are forward-looking statements. The words "anticipate," "believe," "estimate," "expect," "intend," "may," "plan," "predict," "project," "target," "potential," "will," "would," "could," "should," "continue," and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. Forward-looking statements reflect the Company's current expectation regarding future events. These forward-looking statements involve risks and uncertainties that may cause actual results, events or developments to be materially different from any future results, events or developments expressed or implied by such forward-looking statements. Such factors include, but are not limited to, changing market conditions, the successful and timely completion of clinical studies, the timing of our submission of applications for regulatory approvals, EMA, FDA and other regulatory approvals for our product candidates, the occurrence of side effects or serious adverse events caused by or associated with our products and product candidates; our ability to procure adequate quantities of necessary supplies and raw materials for Lutathera and other chemical compounds acceptable for use in our manufacturing processes from our suppliers; our ability to organize timely and safe delivery of our products or product candidates by third parties; any problems with the manufacture, quality or performance of our products or product candidates; the rate and degree of market acceptance and the clinical utility of Lutathera and our other products or product candidates; our estimates regarding the market opportunity for Lutathera, our other product candidates and our existing products; our anticipation that we will generate higher sales as we diversify our products; our ability to implement our growth strategy including expansion in the U.S.; our ability to sustain and create additional sales, marketing and distribution capabilities; our intellectual property and licensing position; legislation or regulation in countries where we sell our products that affect product pricing, taxation, reimbursement, access or distribution channels; and general economic, political, demographic and business conditions in Europe, the U.S. and elsewhere. Except as required by applicable securities laws, we undertake no obligation to publicly update or revise any forward-looking statements, whether as a result of new information, future events or otherwise.

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CONDENSED CONSOLIDATED STATEMENTS OF INCOME

Three Months ended March 31, 2016 and 2015

In € thousands	03.31.2016	03.31.2015
Sales	26,919	20,764
Raw materials and consumables used	(5,624)	(4,252)
Personnel costs	(9,679)	(6,158)
Other operating expenses	(10,847)	(10,613)
Other operating income	1,310	1,360
Depreciation and amortization	(3,199)	(2,682)
Operating loss	**(1,120)**	**(1,581)**
Finance income (including changes in fair value of contingent consideration)	1,303	14
Finance costs (including changes in fair value of contingent consideration)	(3,481)	(3,801)
Net finance loss	**(2,178)**	**(3,787)**
Loss before income taxes	**(3,298)**	**(5,368)**
Income taxes	**322**	**(535)**
Loss for the period	**(2,976)**	**(5,903)**
Attributable to:		
Owners of the Company	(2,976)	(5,903)
Non-controlling interests	-	-
Loss per share		
Basic (€ per share)	(0.04)	(0.09)
Diluted (€ per share)	(0.04)	(0.09)

Condensed Consolidated statements of comprehensive income

Three Months ended March 31, 2016 and 2015

In € thousands	03.31.2016	03.31.2015
Loss for the period	**(2,976)**	**(5,903)**
Other comprehensive income / (expense):		
Items that may be reclassified subsequently to profit or loss		
Exchange differences on translating foreign operations	(761)	3,860
Items that will never be reclassified subsequently to profit or loss		
Remeasurement of defined benefit liability	(37)	(19)
Other comprehensive income /(expense) net of tax (1)	(798)	3,841
Total comprehensive loss for the period	**(3,774)**	**(2,062)**
Total comprehensive loss attributable to:		
Owner of the Company	(3,774)	(2,062)
Non-controlling interests	-	-

(1) Tax effect of €16 thousand at March 31, 2016 and €9 thousand at March 31, 2015.

Condensed Consolidated statements of financial position

at March 31, 2016

ASSETS (In € thousands)	03.31.2016	12.31.2015
Non-current assets	**145,329**	**116,872**
Goodwill	33,215	22,662
Other intangible assets	44,703	31,884
Property, plant and equipment	61,094	56,332
Financial assets	961	1,512
Other non-current assets	5,105	4,185
Deferred tax assets	251	297
Current assets	**134,109**	**157,231**
Inventories	5,179	4,105
Trade and other receivables	27,830	23,625
Other current assets	12,646	10,615
Cash and cash equivalents	88,454	118,886
TOTAL ASSETS	**279,438**	**274,103**

EQUITY AND LIABILITIES (In € thousands)	03.31.2016	12.31.2015
Equity attributable to owners of the Company	**167,284**	**169,754**
Share capital	7,856	7,856
Share premium	213,982	213,982
Reserves and retained earnings	(51,578)	(35,083)
Net loss for the period / year	(2,976)	(17,001)
Total equity	**167,284**	**169,754**
Non-current liabilities	**70,516**	**68,341**
Non-current provisions	10,334	9,968
Non-current financial liabilities	15,197	16,205
Deferred tax liabilities	5,774	2,804
Other non-current liabilities	39,211	39,364
Current liabilities	**41,638**	**36,008**
Current financial liabilities	5,204	5,560
Trade and other payables	16,916	14,710
Other current liabilities	19,518	15,738
Total liabilities	**112,154**	**104,349**
TOTAL EQUITY AND LIABILITIES	**279,438**	**274,103**

Condensed Consolidated statements of cash flows

Three Months ended March 31, 2016 and 2015

In € thousands	03.31.2016	03.31.2015
Cash flows from operating activities		
Net loss for the period	(2,976)	(5,903)
Adjustments:		
Depreciation, amortization and impairment of non-current assets	3,199	2,682
Share based payment expense	1,306	395
Loss / (Gain) on disposal of property, plant and equipment	72	1
Financial result	2,178	3,787
Income tax expense	(322)	535
Subtotal	**3,457**	**1,497**
Increase in inventories	(584)	(337)
Increase in trade receivables	(3,300)	(4,201)
Increase / (decrease) in trade payables	1,572	(127)
Change in other receivables and payables	(3,524)	474
Increase / (decrease) in provisions	81	(19)
Change in working capital	**(5,755)**	**(4,210)**
Income tax paid	(425)	(223)
Net cash used in operating activities	**(2, 723)**	**(2,936)**
Cash flows from investing activities		
Acquisition of property, plant and equipment	(3,623)	(1,590)
Acquisition of intangible assets	(577)	(450)
Acquisition of financial assets	(221)	(220)
Reimbursment of financial asset	760	-
Interests received	130	-
Proceeds from disposal of property, plant and equipment	-	31
Acquisition of subsidiaries, net of cash acquired	(19,959)	-
Net cash used in investing activities	**(23,490)**	**(2,229)**
Net cash from financing activities		
Payment of deferred and contingent liabilities to former owners of acquired subsidiaries	(194)	-
Repayment of borrowings	(1,283)	(1,250)
Interests paid	(95)	(202)
Net cash used in financing activities	**(1,572)**	**(1,452)**
Net decrease in cash and cash equivalents	**(27,785)**	**(6,617)**
Cash and cash equivalents at the beginning of the period	118,886	45,096
Effect of exchange rate changes on cash and cash equivalents	(2,647)	646
Cash and cash equivalents at the end of the period	**88,454**	**39,125**