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 October 2016

_____

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: October 11, 2016

ADVANCED ACCELERATOR APPLICATIONS S.A.

EXHIBIT INDEX

Exhibit No.	Description
99.1	Press Release dated October 11, 2016 titled "Advanced Accelerator Applications Announces Presentations on Lutathera® NETTER-1 Phase III and NeoBOMB1 at EANM"

PRESS RELEASE

Advanced Accelerator Applications Announces Presentations on Lutathera® NETTER-1 Phase III and NeoBOMB1 at EANM

Saint-Genis-Pouilly, France – October 11, 2016 – Advanced Accelerator Applications S.A. (NASDAQ:AAAP) ("AAA" or the "Company"), an international specialist in Molecular Nuclear Medicine (MNM), today announced that data from the pivotal NETTER-1 Phase III study investigating the treatment of Lutathera® (lutetium Lu 177 dotatate) in patients with somatostatin receptor positive midgut neuroendocrine tumors (midgut NETs) and preclinical oncology studies with NeoBOMB1, a novel GRPR antagonist, will be presented at the 29th Annual Congress of the European Association of Nuclear Medicine (EANM), October 15-19, in Barcelona, Spain.

The details of the presentations are as follows:

Presentation #OP394: NETTER-1 Phase III in Patients with Midgut Neuroendocrine Tumors Treated with ^{177}Lu-Dotatate: Efficacy and Safety Results
Session: 1004 - Do.MoRe: Neuroendocrine Tumours
Session Date: October 17, 2016
Session Time: 17:14 – 17:25 Central European Time

Presentation #OP150: Theranostic perspectives of [^{67}Ga/^{111}In/^{177}Lu] NeoBOMB1 in prostate cancer - First evidence for clinical translation with [^{68}Ga] NeoBOMB1 and PET/CT
Session: 410 - Late Breaking Abstracts: "The Presidential Session"
Session Date: October 16, 2016
Session Time: 15:03 – 15:47 Central European Time

Presentation #OP340: [^{68}Ga] NeoBOMB1, a new candidate in the diagnosis of breast cancer: First results in GRPR-expressing cells and animal models
Session: 905 - M2M: Radiolabelled Peptides
Session Date: October 17, 2016
Session Time: 14:30 – 14:41 Central European Time

Presentation #OP547: NeoBOMB1, a novel GRP analog, for theranostic use in oncology
Session: 1405 - M2M/Do.MoRe - Featured: Radionuclide Therapy - Preclinical
Session Date: October 18, 2016
Session Time: 15:29 – 15:40 Central European Time

About Lutathera®

Lutathera® (or lutetium Lu 177 dotatate) is a Lu-177-labeled somatostatin analogue peptide currently in development for the treatment of gastro entero pancreatic neuroendocrine tumors (GEP-NETs), including foregut, midgut, and hindgut neuroendocrine tumors in adults. Lutathera® belongs to an emerging form of treatments called Peptide Receptor Radionuclide Therapy (PRRT), which involves targeting carcinoid tumors with radiolabeled somatostatin analogue peptides. 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. Currently, Lutathera® is also administered on a compassionate use and named patient basis for the treatment of NETs and other tumors over-expressing somatostatin receptors in ten European countries and in the US under an Expanded Access Program (EAP) for midgut NETs. In an analysis of the NETTER-1 Phase III trial's primary endpoint of PFS assessment completed in September 2015, the number of disease progressions or deaths was 23 in the Lutathera® arm and 68 in the Octreotide LAR 60 mg arm. The 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% of disease progression or death versus Octreotide LAR 60 mg (hazard ratio 0.21, 95% CI: 0.13-0.33; $p<0.0001$). NDA and MAA submissions to the FDA and EMA are currently under review and the FDA has granted Priority Review.

About NeoBOMB1

NeoBOMB1 is a new generation antagonist bombesin analogue, which binds selectively and with high affinity to the GRP receptors expressed by several types of tumors, including prostate, breast and gastro-intestinal stromal tumors. GRP receptors are considered excellent molecular targets for both therapeutic and diagnostic purposes in those cancers. In vitro and in vivo pre-clinical models have shown that NeoBOMB1 has suitable imaging properties as well as a favorable pharmacokinetic and safety profile. AAA is currently planning three clinical studies with NeoBOMB1 in different indications including gastrointestinal stromal tumors, prostate cancer and breast cancer.

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 neuroendocrine tumors, a significant unmet medical need. Founded in 2002, AAA has its headquarters in Saint-Genis-Pouilly, France. AAA currently has 22 production and R&D facilities able to manufacture both diagnostics and therapeutic MNM products, and has over 450 employees in 13 countries (France, Italy, UK, Germany, Switzerland, Spain, Poland, Portugal, The Netherlands, Belgium, Israel, U.S. and Canada). AAA reported sales of €88.6 million in 2015 (+26.8% vs. 2014) and sales of €54.6 million for 1H 2016 (+26.9% vs. 1H15). AAA is listed on the Nasdaq Global Select Market under the ticker "AAAP". For more information, please visit: www.adacap.com.

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.

Contacts:

AAA Corporate Communications
Rachel Levine
Director of Communications
rachel.levine@adacap.com
Tel: + 1-212-235-2395

AAA Investor Relations
Jordan Silverstein
Director of Investor Relations
jordan.silverstein@adacap.com
Tel: + 1-212-235-2394

Media inquiries:

Axess Public Relations (Italy)
Dario Francolino
dario.francolino@axesspr.com
Tel: +39 3488818029