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 January 2017

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: January 12, 2017

ADVANCED ACCELERATOR APPLICATIONS S.A.

EXHIBIT INDEX

Exhibit No.	Description
99.1	Press Release dated January 12, 2017 titled "Advanced Accelerator Applications Announces *New England Journal of Medicine* Publication of Lutathera® NETTER-1 Phase III Results"

PRESS RELEASE

Advanced Accelerator Applications Announces *New England Journal of Medicine* Publication of Lutathera® NETTER-1 Phase III Results

Saint-Genis-Pouilly, France – January 12, 2017 – Advanced Accelerator Applications S.A. (NASDAQ:AAAP) ("AAA" or "the Company"), an international specialist in Molecular Nuclear Medicine (MNM), today announced that the *New England Journal of Medicine* published the results of the NETTER-1 Phase III study evaluating efficacy and safety of Lutathera® (lutetium-177 dotatate), an investigational drug, in patients with advanced, progressive somatostatin receptor-positive midgut neuroendocrine tumors ("NETs").

In this study, the primary endpoint was progression-free survival (PFS). Secondary endpoints included objective response rate (ORR), overall survival, safety, and tolerability. The NETTER-1 study met its primary endpoint by demonstrating that treatment with Lutathera® was associated with a statistically significant and clinically meaningful 79% reduction in risk of disease progression or death versus treatment with a high dose (60 mg) of Octreotide LAR (hazard ratio 0.21, 95% Confidence Interval: 0.13-0.33; p<0.0001). The estimated PFS rate at month 20 was 65.2% (95% Confidence Interval: 50.0-76.8) in the Lutathera® arm and 10.8% (95% Confidence Interval: 3.5-23.0) in the control arm. Median PFS was 8.4 months in the control arm, and had not yet been reached in the Lutathera® arm.

Significant treatment benefits associated with Lutathera® were observed irrespective of stratification factors and prognostic factors. The response rate of 18% in the Lutathera® arm (compared to 3% with Octreotide) is also notable given that response rates above 5% have not been observed in large randomized clinical trials investigating other systemic therapies in this population. Although the trial has not reached the point at which median overall survival can be calculated, interim analysis suggests an overall survival improvement. Importantly, Lutathera® when administered concomitantly with a renal-protective agent, had low rates of grade three or four hematological toxicity, and no evidence of nephrotoxicity observed over the study time-frame (median follow-up time 14 months).

Jonathan Strosberg, MD, Associate Professor, Section Head, Neuroendocrine Tumor Program at Moffitt Cancer Center, and lead author of the publication noted, *"The clinically meaningful and statistically significant improvement in PFS and ORR achieved with treatment of Lutathera®, when compared to high dose Octreotide supports its potential utility in the treatment of NET patients. As a clinician treating many patients with this condition, these results bring hope for our ability to improve lives."*

Stefano Buono, Chief Executive Officer of AAA stated, *"We believe these data show significant clinical benefit of Lutathera® and are proud to have this study published in such a prestigious journal. More than 1,500 patients in the U.S. and Europe have received treatment with Lutathera® through our compassionate use and named patient programs. We believe Lutathera® can offer patients with NETs a much needed treatment option and enhance the current standard of care."*

The *New England Journal of Medicine* publication may be found online at: www.nejm.org/doi/full/10.1056/NEJMoa1607427.

About NETTER-1

NETTER-1 is the first Phase III multi-center, randomized, controlled trial evaluating Lutathera® in patients with inoperable, progressive, somatostatin receptor positive midgut NETs. 229 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), plus best supportive care (Octreotide LAR 30 mg for symptom control) 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 blinded reading center every 12 weeks. Secondary objectives included objective response rate, overall survival, toxicity, and health-related quality of life.

About Neuroendocrine Tumors (NETs)

Neuroendocrine tumors, also known as NETs, are a group of tumors originating in the neuroendocrine cells of many different organs. NETs can remain clinically silent for years delaying the diagnosis in a large number of patients. They are the second most common type of gastrointestinal malignancy by prevalence and their incidence is increasing. NETs are classified as orphan diseases by European and U.S. regulatory authorities, meaning that they affect a relatively small population of individuals in the relevant jurisdiction. In the United States, orphan drugs are defined as drugs that treat diseases or conditions that affect 200,000 or fewer individuals in the country. In the European Union, orphan drugs are defined as drugs that treat diseases or conditions that affect fewer than five out of 10,000 individuals in the European Union.

About Lutathera®

Lutathera® (or lutetium Lu 177 dotatate) is a Lu-177-labeled somatostatin analog peptide currently in development for the treatment of gastroenteropancreatic 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 neuroendocrine tumors with radiolabeled somatostatin analog peptides. This novel compound has received orphan drug designation from the European Medicines Agency (EMA) and the US Food and Drug Administration (FDA). Currently, Lutathera® is 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 the analysis of the Lutathera® Phase III NETTER-1 trial's primary endpoint of Progression Free Survival (PFS), the number of patients having disease progression or death 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; $p<0.0001$). New Drug Application and Marketing Authorization Application submissions to the FDA and EMA are currently under review.

About Advanced Accelerator Applications

Advanced Accelerator Applications is an innovative radiopharmaceutical company that develops, produces and commercializes Molecular Nuclear Medicine 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 500 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 (+27% vs. 2014) and sales of €81.3 million for the first 9 months of 2016 (+23% vs. 9 months 2015). 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:

Makovsky & Company
Lee Davies
ldavies@makovsky.com
Tel: +212-508-9651