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 August 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: August 3, 2016

ADVANCED ACCELERATOR APPLICATIONS S.A.

EXHIBIT INDEX

Exhibit No.	Description
99.1	Press Release dated August 3, 2016 titled "Advanced Accelerator Applications Announces First Administration of NETSPOT™ at Holy Name Medical Center"

Exhibit 99.1

PRESS RELEASE

Advanced Accelerator Applications Announces First Administration of NETSPOT™ at Holy Name Medical Center

Saint-Genis-Pouilly, France - August 3, 2016 – Advanced Accelerator Applications S.A. (NASDAQ:AAAP) ("AAA" or "the Company"), an international specialist in Molecular Nuclear Medicine (MNM), today announced the first administration of NETSPOT™, a product recently approved by the U.S. Food and Drug Administration ("FDA") for the preparation of gallium Ga 68 dotatate for injection, for the localization of somatostatin receptor positive neuroendocrine tumors ("NETs") in adult and pediatric patients using Positron Emission Tomography ("PET") at Holy Name Medical Center ("Holy Name") in Teaneck, NJ.

Michael Maron, President and Chief Executive Officer of Holy Name commented, *"In our commitment to provide the latest advancements in cancer diagnosis, I'm proud to say Holy Name is the first in the U.S. to offer a new standard of care for our patients. As in all cancer care, earlier detection can be life-saving and almost always improves the quality of life for patients."*

Stefano Buono, Chief Executive Officer of AAA said, *"We are very excited to bring NETSPOT™, a widely anticipated new imaging product to patients in the U.S. We believe NETSPOT™ offers superior sensitivity and accuracy compared to previously available diagnostics for NET patients. In a clinical study, NETSPOT demonstrated the ability to change management decisions regarding patients in 71% of cases previously imaged with Octreoscan.[1] Saving just one patient from futile surgery can improve the treatment experience, as well as generate cost savings greater than the cost of providing a year's worth of NETSPOT™ injections to every NET patient treated in the same hospital! We are proud to contribute to the introduction of pharmaceutical products that improve patient care, while decreasing healthcare costs."*

Lynn Reiman the first patient to receive a PET scan with NETSPOT™ declared, *"NET patients like me typically struggle for years, trying to get an accurate diagnosis because of the nature of this hard-to-detect cancer. Beyond the frustration of living with an undetected disease, are the health consequences of delayed treatment. I've had this disease for eight years, and throughout that time, Dr. Condemi has treated my symptoms because he knew the disease was there, but he couldn't target the location of the cancerous cells with the usual method of detection, which was an Octreoscan – until now. I'm thrilled to see better diagnostic tools becoming available and am honored to be the first U.S. patient to receive this scan."*

Giuseppe Condemi, MD, PhD, Medical Director of the Carcinoid Center at Holy Name stated, *"NETSPOT™ is a significant improvement over existing diagnostic tools and will enable us to more accurately stage and better manage patients. This is the biggest challenge oncologists face with NET patients, due to the complexity of localizing these malignancies."*

Jacqueline Brunetti, M.D., Medical Director of Radiology at Holy Name observed, *"NETSPOT™ alleviates patient burden by providing a faster procedure, lower radiation exposure and eliminating the need for bowel cleansing; while increasing our ability to handle more patients with faster scan acquisition and reduced imaging time. Most importantly, NETSPOT™ is a dramatic leap forward in detecting NETs and has greatly enhanced sensitivity versus older techniques."*

NETSPOT™ is currently available in the U.S. in two forms: As a kit for reconstitution using a Ga 68 generator, and as NETSPOT™ Injection, a ready-to-use dose delivered from a local radiopharmacy in selected metropolitan areas. AAA has partnered with four radiopharmacies in the U.S. to facilitate availability of *NETSPOT™* nationally, including Zevacor Pharma Inc., that delivered the NETSPOT™ injection to Holy Name Medical Center.

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[1] Srirajaskanthan R, Kayani I, Quigley AM, Soh J, Caplin ME, Bomanji J. The role of 68Ga-DOTATATE PET in patients with neuroendocrine tumors and negative or equivocal findings on 111In-DTPA-octreotide scintigraphy. J Nucl Med. 2010;51(6):875-882.

About Neuro Endocrine Tumors (NETs)

Neuro Endocrine 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. These cancers are rare but they are the second most common type of gastrointestinal malignancy and their incidence is increasing.

The estimated incidence of NETs for the combined populations of the United States and the European Union is approximately 47,300.

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 NETSPOT™

NETSPOT™ is a novel patented kit developed by AAA for the preparation of gallium Ga 68 dotatate for injection, for localization of somatostatin receptor positive neuroendocrine tumors (NETs) in adult and pediatric patients using Positron Emission Tomography ("PET"). The product has been designated as an orphan drug by the EMA and the FDA. For full prescribing information for NETSPOT™ please refer to: http://go.usa.gov/cSywA.

About Holy Name Medical Center

Holy Name Medical Center is a fully accredited, not-for-profit healthcare facility based in Teaneck, New Jersey. Founded and sponsored by the Sisters of St. Joseph of Peace in 1925, the comprehensive 361-bed medical center offers leading-edge medical practice and technology administered in an environment rooted in a tradition of compassion and respect for every patient. Holy Name provides high quality health care across a continuum that encompasses education, prevention, early intervention, comprehensive treatment options, rehabilitation and wellness maintenance. Holy Name Medical Center is ranked among the top hospitals in the nation for patient care, clinical performance and workplace excellence. To learn more, visit HolyName.org.

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 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 €26.9 million for 1Q 2016 (+29.6% vs. 1Q15). 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.

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