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 2, 2016

ADVANCED ACCELERATOR APPLICATIONS S.A.

EXHIBIT INDEX

Exhibit No.	Description
99.1	Press Release dated August 2, 2016 titled "Advanced Accelerator Applications Announces Clinical Trial Agreement with National Cancer Institute for Study of Lutathera in Patients with Inoperable Pheochromocytoma and Paraganglioma"

Exhibit 99.1

PRESS RELEASE

Advanced Accelerator Applications Announces Clinical Trial Agreement with National Cancer Institute for Study of Lutathera in Patients with Inoperable Pheochromocytoma and Paraganglioma

Saint-Genis-Pouilly, France - August 2, 2016 – Advanced Accelerator Applications S.A. (NASDAQ:AAAP) ("AAA" or "the Company"), an international specialist in Molecular Nuclear Medicine (MNM), today announced a clinical trial agreement with the National Cancer Institute (NCI), part of the National Institutes of Health, whereby NCI will sponsor and conduct a study of Lutathera, an investigational drug, in patients with inoperable pheochromocytoma and paraganglioma.

Pheochromocytoma is a rare endocrine tumor originating in the adrenal glands. Paraganglioma is a tumor that is closely related to pheochromocytoma and originates from outside the adrenal glands. In the United States (US), pheochromocytoma and paraganglioma are considered orphan diseases, with an incidence of approximately 0.8 cases per 100,000 per year and a prevalence of approximately 0.3% in major US academic centers. While surgical resection is the preferred treatment option for benign and unifocal pheochromocytoma/paraganglioma, there are just a few effective and efficient treatment options for patients with metastatic disease, and their clinical outcome is generally poor. Although the majority of pheochromocytoma and paragangliomas are benign, approximately 10-25% of these tumors present with metastasis, and up to 35% of these cases are associated with familial syndromes such as multiple endocrine neoplasia 2A and 2B, neurofibromatosis type 1, von Hippel-Lindau syndrome, and succinate dehydrogenase subunits A-D.

Frank Lin, M.D., Medical Officer with the NCI's Cancer Imaging Program and collaborator with the Molecular Imaging Program, directed by Peter Choyke, M.D., F.A.C.R., in NCI's Center for Cancer Research will be the Principal Investigator for a planned NCI-sponsored study. The envisioned trial will draw from the unique population of pheochromocytoma and paraganglioma patients being evaluated at the NIH.

"We applaud the NCI's efforts to address the needs of patients suffering from these rare malignancies and are pleased to facilitate the exploration of additional potential indications for Lutathera," said Stefano Buono, Chief Executive Officer of AAA. *"Over the past three years, Lutathera has been used under compassionate use and named patient programs in 10 European countries in almost 1,300 patients, including those with pheochromocytoma and paraganglioma. In a Phase II trial conducted at the Erasmus Medical Center that is part of our New Drug Application to the U.S. Food and Drug Administration and Marketing Authorization Application to the European Medicines Agency, 45 patients with these indications were treated with a median Progression Free Survival of 24.8 months and a median Overall Survival that was not reached. We hope these results will be confirmed by the NCI trial*."

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 Phase 3 trial's primary endpoint of PFS assessment completed by the Company in September 2015, the number of disease progressions or deaths was 23 events 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 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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