



DIVISION OF  
CORPORATION FINANCE

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

Mail Stop 4546

September 30, 2016

Stefano Buono  
Chief Executive Officer  
Advanced Accelerator Applications S.A.  
20 rue Diesel  
01630 Saint Genis Pouilly, France

**Re: Advanced Accelerator Applications S.A.  
Registration Statement on Form F-1  
Filed September 26, 2016  
File No. 333-213806**

Dear Mr. Buono:

We have limited our review of your registration statement to those issues we have addressed in our comment.

Please respond to this letter by amending your registration statement and providing the requested information. If you do not believe our comment applies to your facts and circumstances or do not believe an amendment is appropriate, please tell us why in your response.

After reviewing any amendment to your registration statement and the information you provide in response to this comment, we may have additional comments.

Exhibit 5.1

1. We note the assumptions on page 2 of the legal opinion. In particular, we note that counsel has assumed "that the Company is a company duly organized, validly existing and incorporated under the laws of France." Counsel may not assume material facts underlying the opinion or any readily ascertainable facts. Please file a revised legal opinion which retains no such assumptions. For guidance, please see Staff Legal Bulletin No. 19 at Section II.B.3.a, available on the Commission's website.

We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filing to be certain that the filing includes the information the Securities Act of 1933 and all applicable Securities Act rules require. Since the company and its management are in possession of all facts relating to a company's disclosure, they are responsible for the accuracy and adequacy of the disclosures they have made.

Notwithstanding our comment, in the event you request acceleration of the effective date of the pending registration statement, please provide a written statement from the company acknowledging that:

- should the Commission or the staff, acting pursuant to delegated authority, declare the filing effective, it does not foreclose the Commission from taking any action with respect to the filing;
- the action of the Commission or the staff, acting pursuant to delegated authority, in declaring the filing effective, does not relieve the company from its full responsibility for the adequacy and accuracy of the disclosure in the filing; and
- the company may not assert staff comments and the declaration of effectiveness as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

Please refer to Rules 460 and 461 regarding requests for acceleration. We will consider a written request for acceleration of the effective date of the registration statement as confirmation of the fact that those requesting acceleration are aware of their respective responsibilities under the Securities Act of 1933 and the Securities Exchange Act of 1934 as they relate to the proposed public offering of the securities specified in the above registration statement. Please allow adequate time for us to review any amendment prior to the requested effective date of the registration statement.

Please contact Jeffrey Gabor at (202) 551-2544 or Mary Beth Breslin at (202) 551-3625 with any questions.

Sincerely,

/s/ Mary Beth Breslin for

Suzanne Hayes  
Assistant Director  
Office of Healthcare and Insurance

cc: John G. Crowley, Esq.  
Davis Polk & Wardwell LLP