

## Secondment Report Form

<b>Seconded</b>	Francisco José Cano Fácila
<b>Host Organization</b>	Id: Technical University of Denmark
	Name: Professor Sergey Pivnenko
<b>Research Topic(s)</b>	Antenna measurement
	Near field measurements
	Truncation errors

### ACTIVITIES DURING THE SECONDMENT

*<Brief description of the main activities developed during the stay, and how they contributed to achieve your work plan goals (max. 3 pages)>*

The program of the research was related to studying different errors in antenna measurements; in particular, truncation errors in spherical near-field measurements. As it is well-known, the most accurate antenna patterns are obtained using the spherical near-field technique not only because the measurement is performed in a controlled environment, but also because the antenna under test is fully enclosed by the acquisition surface. Therefore, truncation errors do not appear in this kind of measurement and the far-field pattern can be found in all directions. However, there are special cases, for example, when measuring electrically large antennas, where the measurement time with the spherical near-field technique is prohibitively long and an acquisition over the whole spherical surface is not practical. Therefore, to reduce the data acquisition time, partial sphere measurement is usually made, taking samples over a portion of the spherical surface in the direction of the main beam. But in this case, the antenna under test radiation pattern is not known outside the measured angular sector as well as a truncation error is present in the calculated far-field pattern within this sector. In the stay, a new method to extend the valid region of the calculated far-field up to the whole forward hemisphere from a truncated SNF measurement was developed. This method was implemented by software and was validated by using both simulated and measured data.

### MAIN RESULTS OF THE STAY

*< List of the publications co-written (or in progress)>*

The results obtained during the stay will be presented in an international conference (European Conference on Antennas and Propagation, EuCAP 2011) on March, 2011. Moreover, a journal paper (IEEE Transaction on Antennas and Propagation) is in progress.



Number of Publications: 2

Other(s):

(1) \_\_\_\_\_

Number of Documents/ Reports: 1

(2) \_\_\_\_\_

Number of Case Studies & Demonstrators: \_\_\_\_\_

(3) \_\_\_\_\_

\* Attach all relevant documentation that specifies your results

### FORECAST ACTIVITIES

*<Are there any envisaged activities following this secondment project, new collaborations, co directed PhD, etc>*

In order to improve CARE's secondment program, please fill this short questionnaire. Use the space at the end to expand your answers, if needed. Our aim is to improve the general experience for secondees in future.

Disagree < > Agree

### GENERAL

My objectives were achieved.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input checked="" type="checkbox"/>
The research topics were relevant to my work.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input checked="" type="checkbox"/>
I benefited from being part of a wider research culture.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input checked="" type="checkbox"/>	4 <input type="checkbox"/>

### HOST ORGANIZATION

I am satisfied with the quality and quantity of supervision I received.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input checked="" type="checkbox"/>
I had access to adequate resources to support my research..	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input checked="" type="checkbox"/>	4 <input type="checkbox"/>

### SECONDMENT PROGRAM

I would recommend this secondment programme to others.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input checked="" type="checkbox"/>
I believe the skills I have learned will help me to improve my job/research.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input checked="" type="checkbox"/>
I would apply to another programme similar to CARE.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input checked="" type="checkbox"/>	4 <input type="checkbox"/>
In general, how would you classify the CARE Secondment Programme?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input checked="" type="checkbox"/>

Other questions/comments to be potentially considered: \_\_\_\_\_

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SIGNATURES

**Candidate**    **Francisco José Cano Fácila**

**Date:** 2011/01/14  
(year/month/day)

**Signature**

