

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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PARROT S.A. and PARROT, INC.  
Petitioners

v.

DRONE TECHNOLOGIES, INC.  
Patent Owner

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Case IPR2014-00732  
U.S. Patent No. 8,106,748

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**DECLARATION OF ROBERT H. STURGES, JR., PH.D., P.E. IN  
RESPONSE TO THE PETITION FOR *INTER PARTES* REVIEW OF U.S.  
PATENT NO. 8,106,748**

**February 11, 2014**

Drone Technologies, Inc. – EXHIBIT 2013

## Table of Contents

### Contents

I.	Introduction .....	1
II.	Qualifications.....	2
III.	Materials Considered .....	3
IV.	Relevant Legal Standards.....	3
	A. Field of the invention.....	3
	B. Person having ordinary skill in the art.....	4
	C. Claim Construction .....	4
V.	Overview of the Claimed Invention of the '748 Patent.....	5
VI.	Overview of the Asserted Prior Art.....	9
	A. General comments on the cited prior art.....	10
	1. Spirov .....	10
	2. Shkolnikov.....	13
	B. Rejection of claims 1-3, 5, and 10-12 as obvious over Spirov, Bathiche, and Shkolnikov .....	14
	C. Rejection of claims 4, 8, and 9 as obvious over Spirov, Bathiche, Shkolnikov, and Fouche .....	18
	D. Rejection of claims 6 and 7 as obvious over Spirov, Bathiche, Shkolnikov, and Barr .....	18
VII.	Concluding remarks.....	19

## I. Introduction

1. I have been engaged by counsel for Patent Owner, Drone Technologies, Inc. (“Patent Owner”) to provide my expertise in this *inter partes* review (“IPR”) proceeding, in which Parrot S.A. and Parrot, Inc. (together “Petitioners”) have challenged the validity of Patent Owner’s U.S. Patent No. 8,106,748 (“the ’748 Patent”). All statements are either made of my own knowledge are true, or are statements made on information and belief that are believed to be true.

2. Specifically, I have been asked to evaluate the prior art cited, and invalidity arguments set forth, in (1) the “Petition for *Inter Partes* Review of U.S. Patent No. 8,106,748 under 35 U.S.C. §§ 311-319 and 37 C.F.R. § 42.100 et seq.” dated May 6, 2014 (“Petition”); (2) the accompanying Declaration of Dr. Raffaello D’Andrea regarding the ’748 Patent (“D’Andrea Declaration”); and (3) the decision to institute *inter partes* review of the ’748 Patent (“Decision to Institute”) issued by the Patent Trial and Appeal Board (“PTAB”) on October 28, 2014. Here, I offer my opinion as to whether Petitioners have proven, by a preponderance of the evidence, that the claims of the ’748 Patent are invalid. For the reasons set forth herein, I conclude that they have not.

## II. Qualifications

3. I am a Professor in the Departments of Mechanical Engineering and Industrial & Systems Engineering at Virginia Tech.

4. I have been in the Mechanical Engineering field for over 40 years. My academic credentials include a Ph. D. in Mechanical Engineering from Carnegie Mellon University, and Masters and Bachelors of Science degrees from M.I.T. I am also a licensed Professional Engineer in the State of Pennsylvania.

5. I have approximately 18 years industrial experience working as a mechanical engineer, first with the Charles Stark Draper Laboratories in Cambridge, Mass, and later with the Westinghouse Electric Corporation.

6. In 1987, I moved from industry to academia. I spent about nine years as a member of the faculty of the Department of Mechanical Engineering at Carnegie Mellon University. In 1997, I joined the faculty of Virginia Polytechnic Institute and State University (Virginia Tech) in a joint position in the Departments of Mechanical Engineering and Industrial & Systems Engineering at Virginia Tech, where I am currently a Professor and Director of the Robotics and Automation Laboratory.

7. One of the focal points of my teaching and research is robotic controls, and I have done extensive research and work in the area of mobile robotic

systems including sensing and navigation. I am the sole author of a new textbook on practical field robotics, which covers mobile robot sensing and control in depth.

8. I am a named inventor in 16 U.S. Patents and have authored over 190 journal and conference publications, two book chapters, and a new book. A complete list of my patents and publications is set forth in my curriculum vitae, which is attached at Attachment A.

### **III. Materials Considered**

9. In preparing this declaration, I considered the Petitions, the art cited therein, Dr. D'Andrea's declaration and testimony, the PTAB decision to institute trial, and any other materials that might be referenced below.

### **IV. Relevant Legal Standards**

#### **A. Field of the invention**

10. The field of the invention for the '748 Patent relates to a remote-controlled motion apparatus that includes a remote-controlled device and a remote controller. '748 Patent, col. 1, lines 9-12, Ex. 2000. Described generally, the field of the invention for the '748 Patent is a control system used for controlling the motion of a remote-controlled vehicle.

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