# UNITED STATES PATENT AND TRADEMARK OFFICE —————— BEFORE THE PATENT TRIAL AND APPEAL BOARD ——————

HTC CORPORATION and HTC AMERICA, INC. Petitioners,

v.

UNILOC LUXEMBOURG S.A., Patent Owner

Declaration of Joseph A. Paradiso, PhD under 37 C.F.R. § 1.68



# **TABLE OF CONTENTS**

1.	INTRODUCTION4					
II.	QUALIFICATIONS AND PROFESSIONAL EXPERIENCE5					
III.	LEVEL OF ORDINARY SKILL IN THE ART10					
IV.	RELEVANT LEGAL STANDARDS					
	A.	Anticipation	12			
	B.	Obviousness	13			
V.	OVERVIEW OF THE '508 PATENT					
	A.	Summary of the Patent	14			
	B.	Prosecution History	16			
VI.	BROADEST REASONABLE INTERPRETATION					
	A.	"dominant axis"	17			
	B.	"cadence window"	18			
	C.	"a dominant axis logic to continuously determine an orientation of a device, to assign a dominant axis, and to update the dominant axis as the orientation of the device changes"	18			
	D.	"a counting logic to count periodic human motions by monitoring accelerations relative to the dominant axis"	20			
	E.	"a counting logic to identify and count periodic human motions"	21			
	F.	"a cadence logic to continuously update a dynamic cadence window"	22			
	G.	"a mode logic, to switch the device from a non-active mode to an active mode after a number of periodic human motions are detected within appropriate cadence windows by the counting logic"	23			



VII.	IDENTIFICATION OF HOW THE CLAIMS ARE UNPATENTABLE				
	A.	State	of the Art at the Time of the '508 Patent	24	
	B.	Sumr	nary of Pasolini	26	
	C.	Sumr	nary of Fabio	28	
	D.		enge #1: Claims 1-2 and 11-12 are obvious under 35 C. § 103(a) over Pasolini	32	
	E.		enge #2: Claims 6-8, 15-16, and 19 are obvious under 35 C. § 103(a) over Fabio.	47	
	F.	Challenge #3: Claims 3-4, 13-14, and 20 are unpatentable under 35 U.S.C. § 103 over Pasolini in view of Fabio			
		1.	Reasons to Combine Pasolini and Fabio	79	
		2.	Detailed Analysis	82	
VIII	CONCLUSION			95	



### I. INTRODUCTION

- 1. I am making this declaration at the request of HTC Corporation and HTC America, Inc. in the matter of the *Inter Partes* Review of U.S. Patent No. 7,653,508 ("the '508 Patent") to Kahn et al.
- 2. I am being compensated for my work in this matter at the rate of \$600/hour. I am also being reimbursed for reasonable and customary expenses associated with my work and testimony in this investigation. My compensation is not contingent on the outcome of this matter or the specifics of my testimony.
- 3. I have been asked to provide my opinions regarding whether claims 1-4, 6-8, 11-16, 19, and 20 of the '508 Patent are unpatentable, either because they are anticipated or would have been obvious to a person having ordinary skill in the art ("POSITA") at the time of the alleged invention, in light of the prior art. It is my opinion that all of the limitations of claims 1-4, 6-8, 11-16, 19, and 20 would have been either anticipated or obvious to a POSITA.
  - 4. In the preparation of this declaration, I have studied:
    - a) The '508 Patent, Ex. 1001;
    - b) The prosecution history of the '508 Patent, Ex. 1002;
    - c) U.S. Patent No. 7,463,997 to Fabio Pasolini et al. ("Pasolini"), Ex. 1005; and



- d) U.S. Patent No. 7,698,097 to Fabio Pasolini et al. ("Fabio"), Ex. 1006.
- 5. In forming the opinions expressed below, I have considered:
  - a) The documents listed above, and
  - b) My own knowledge and experience based upon my work in the field of wireless communications, as described below.

# II. QUALIFICATIONS AND PROFESSIONAL EXPERIENCE

- 6. My complete qualifications and professional experience are described in my *Curriculum Vitae*, a copy of which can be found in Ex. 1004. The following is a brief summary of my relevant qualifications and professional experience.
- 7. As shown in my curriculum vitae, I have devoted my career to various fields of physical, electrical, and computer science with more than two decades focused on embedding sensing, including wearable and wireless sensors. I have 20 years of experience in wearable devices and computing, during which I invented and fielded many types of wearable activity tracking devices that utilized a variety of power management and wakeup protocols.
- 8. I am the Alexander W. Dreyfoos (1954) Professor in Media Arts and Sciences at the Massachusetts Institute of Technology (MIT), where I direct the Responsive Environments Group, which explores how sensor networks augment and mediate human experience, interaction and perception. I also have served as co-



# DOCKET

# Explore Litigation Insights



Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

# **Real-Time Litigation Alerts**



Keep your litigation team up-to-date with **real-time** alerts and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

# **Advanced Docket Research**



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

# **Analytics At Your Fingertips**



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

#### API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

#### **LAW FIRMS**

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

#### **FINANCIAL INSTITUTIONS**

Litigation and bankruptcy checks for companies and debtors.

## **E-DISCOVERY AND LEGAL VENDORS**

Sync your system to PACER to automate legal marketing.

