Declaration of Dr. Michael Zyda in Support of Petition for *Inter Partes* Review of U.S. Patent No. 10,403,051 B2

UNITED STATES PATENT AND TRADEMARK OFFICE

### BEFORE THE PATENT TRIAL AND APPEAL BOARD

NIANTIC, INC., Petitioner

v.

NANT HOLDINGS IP, LLC, Patent Owner

U.S. Patent No. 10,403,051 B2 Issue Date: September 3, 2019

Title: Interference Based Augmented Reality Hosting Platforms

### **DECLARATION OF DR. MICHAEL ZYDA**

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1.	Independent claim 1				
	a.	"An augmented reality (AR) platform system comprising" (Claim 1 preamble)67			
	b.	"an AR object repository storing available AR objects in a first non-transitory computer readable memory; and" (Claim 1[a])			
	с.	"an AR server coupled with the AR object repository and, upon execution of software instructions stored in a second non-transitory computer readable memory by a processor, is configured to:" (Claim 1[b])			
	d.	"obtain digital data representative of an environment of an AR capable mobile device, the digital data including a device location of the AR capable device and a virtual element attribute;" (Claim 1[c])			
	e.	"determine at least one context related to the AR capable device and pertinent to the environment based at least on the device location;" (Claim 1[d])96			
	f.	"identify relevant AR objects from the AR object repository representing available AR objects corresponding to the at least one context;" (Claim 1[e])104			
	g.	"determine whether to alter presence of a relevant AR object based on at least the device location and the virtual element attribute; and" (Claim 1[f])107			
	h.	"cause the AR capable device to render the relevant AR object according to its altered presence." (Claim 1[g])			
2.	Claim 5: "The system of claim 1, wherein the AR server is a remote server coupled with the AR capable device via a wireless network."				

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3.	Claim 6: "The system of claim 1, wherein the relevant AR object is caused to be rendered based on a position of the AR capable device relative to the environment."
4.	Claim 7: "The system of claim 1, wherein the relevant AR object is caused to be rendered based on an orientation of the AR capable device relative to the environment."
5.	Claim 8: "The system of claim 1, wherein the relevant AR object is caused to be rendered within an AR game."132
6.	Claim 9: "The system of claim 1, wherein the relevant AR object is caused to be rendered by superimposing a visual image of at least one relevant AR object over an image of the environment."
7.	Claim 18: "The system of claim 1, wherein the presence of the relevant AR object is altered to include a non- visible presence."
8.	Claim 22: "The system of claim 1, wherein the determination of whether to alter presence of the relevant AR object depends on a time."
9.	Claim 23: "The system of claim 22, wherein the presence alteration of the relevant AR object changes with the time."
10.	Claim 27: "The system of claim 1, wherein the AR server is further configured to enable the AR capable device to populate the environment with at least one of the relevant AR objects."
11.	Claim 28: "The system of claim 1, wherein the environment comprises an AR environment."
12.	Claim 29: "The system of claim 28, wherein the AR environment includes real-world elements and virtual elements."

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	13. Claim 34: "The system of claim 1, wherein the AR se is further configured to enable the AR capable device have an interaction with the rendered relevant AR object."					
	14.	Claim 36: "The system of claim 1, wherein the mobile device is a cell phone."				
	15.	Claim 38: "The system of claim 1, wherein the mobile device is a tablet computer."				
	16.	Independent claim 43150				
		a.	"An Augmented Reality (AR) server coupled with an AR object repository and configured to:" (Claim 43 preamble)			
		b.	"obtain digital data representative of an environment of an AR capable mobile device, the digital data including a device location of the AR capable device and a virtual element attribute;" (Claim 43[a])			
		c.	"determine at least one context related to the AR capable device and pertinent to the environment based at least on the device location;" (Claim 43[b])			
		d.	"identify relevant AR objects from the AR object repository representing available AR objects corresponding to the at least one context;" (Claim 43[c])154			
		e.	"determine whether to make present relevant AR objects based on at least the device location and the virtual element attribute; and" (Claim 43[d])154			
		f.	"cause the AR capable device to render one or more of the relevant AR objects if they have been determined to be made present." (Claim 43[e])157			
C.			Obviousness of the Challenged Claims Over Yu in nz-Pastor			
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