# 501877661 04/04/2012

# PATENT ASSIGNMENT

# Electronic Version v1.1 Stylesheet Version v1.1

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

### **CONVEYING PARTY DATA**

Name	Execution Date
Robert Scott Hartog	02/24/2012
Ralph Clay Taylor	03/22/2012
Rex McCrary	03/27/2012
Kevin McGrath	03/23/2012
Michael Mantor	03/05/2012
Thomas Roy Woller	02/02/2012
Sebastien Nussbaum	02/23/2012
Philip J. Rogers	02/10/2012
Mark Leather	03/30/2012
Nuwan S. Jayasena	02/03/2012

# **RECEIVING PARTY DATA**

Name:	Advanced Micro Devices, Inc.				
Street Address:	One AMD Place				
City:	Sunnyvale				
State/Country:	CALIFORNIA				
Postal Code:	94088				

### PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	13325755

# **CORRESPONDENCE DATA**

 Fax Number:
 (202)371-2540

 Phone:
 (202) 371 2600

 Email:
 rdillon@skgf.com

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent

via US Mail.

Correspondent Name: Steme, Kessler, Goldstein & Fox PLLC

PATENT

REEL: 027987 FRAME: 0737

Address Line 1: 1100 New York Avenue, N.W.

Address Line 4: Washington, DISTRICT OF COLUMBIA 20005

ATTORNEY DOCKET NUMBER: 1972.2320000

NAME OF SUBMITTER: | Theodore A. Wood, Reg. No. 52,374

#### Total Attachments: 98

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#### **ASSIGNMENT OF PATENT RIGHTS**

This is an assignment of patent rights between inventor(s) (1.) Scott Hartog, (2.) Ralph Clay Taylor, (3.) Michael Mantor, (4.) Thomas Roy Woller, (5.) Kevin McGrath, (6.) Sebastien Nussbaum, (7.) Nuwan S. Jayasena, (8.) Rex McCrary, (9.) Philip J. Rogers, and (10.) Mark Leather (hereinafter referred to as the "Inventor(s)") and Advanced Micro Devices, Inc., having a place of business at One AMD Place, Sunnyvale, California, USA (hereinafter referred to as the "Assignee").

WHEREAS, Inventor(s) are named as inventors in the patent application filed in the USA on December 14, 2011, entitled Software Mechanisms For Managing Task Scheduling On An Accelerated Processing Device (APD), having application no. 13/325,755, and having a docket number of 1972.2320000 (hereinafter referred to as the "Application"); and

WHEREAS, Assignee has a desire to acquire all rights, title, and interest in the invention(s) disclosed in the Application (hereinafter referred to as the "Invention(s)"), including any rights, title, and interest in the Invention(s) not previously transferred to Assignee through prior agreement.

NOW, THEREFORE, the parties agree as follows:

- 1. To the extent that Inventor(s) are subject to a prior agreement transferring rights, title, and/or interest in the Invention(s) to the Assignee, Inventor(s) hereby confirm such transfer.
- 2. To the extent that Inventor(s) retain any rights, title, or interest in the Invention(s) not vested in the Assignee on the date(s) of execution of this Assignment, Inventor(s) hereby assign and otherwise transfer to the Assignee their entire right, title, and interest, throughout the world, in and to: the Invention(s), including any patent applications, patents, invention registrations, and equivalents thereof (including any and all provisional, international, regional, and national patents and patent applications, and all divisions, continuations, continuations-in-part, renewals, reissues, reexams, substitutes and extensions thereof), for the Invention(s) and all rights to claim priority thereto. Inventor(s) further assign and

AMD Reference No. 100637

otherwise transfer to Assignee all causes of action and remedies arising under any

patent or patent application for the Invention(s) prior to, on, or after the date(s) of

execution of this Assignment. Inventor(s) shall not be entitled to an accounting for

any causes of action or remedies pursued by Assignee.

3. The transfers set forth in Paragraphs 1 and 2 above are in

consideration for the sum of at least one U.S. dollar (US\$1) (or its equivalent) and/or

other consideration for which both parties acknowledge to be valuable. Such

consideration includes but is not limited to at least one of the following: employment,

an independent contractor agreement, monetary payment, or other benefit hereby

acknowledged as received.

4. Inventor(s) hereby authorize and request the Commissioner of Patents

and Trademarks, or equivalent thereof, to issue the patent for the Invention, and all

resulting patents therefrom, insofar as the Inventor(s)' interest is concerned, to the

Assignee.

5. Inventor(s) further agree to execute any and all powers of attorney,

applications, assignments, declarations, affidavits, and any other papers in

connection therewith necessary to perfect Assignee's rights, title, and interest in the

Invention(s).

6. Inventor(s) hereby authorize Assignee, its successors and assigns, its

legal representatives, or anyone the Assignee may properly designate, to insert in

this Assignment of Patent Rights the filing date and/or application number of the

Application when ascertained.

7. Inventor(s) hereby further agree to, with respect to any patent

application or patent for the Invention(s), at the expense of the Assignee:

i) testify in any legal proceedings,

ii) sign all lawful papers,

iii) execute all divisional, continuation, continuation-in-part, reissue,

reexamination, and substitute applications,

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Michael Mantor (Print Name)	4 4	Water !
State of <u>Flori Va</u> County of <u>Orange</u>		`
On March 5, 2013 before me, (insert date)		
Jennie Leanne Wilson	Receptionist	1
(insert name and title of the	ne notarizing officer)	

instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of that the foregoing paragraph is true and correct.

personally appeared <u>Michael Mantor</u>, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the

WITNESS my hand and official seal.

JENNIE LEANNA WILSON
MY COMMISSION # DD993794
MARY SEARBS May 20, 2014
MODELLE TO THE PROPERTY SECTION OF THE PROPERTY SECTION

Signature: AMERIUM

Witness # 10

instrument the person(s), or executed the instrument.	or the entity upon behalf of which	the person(s) acted,
Certify under PENALTY	Y OF PERJURY under the law that the foregoing paragraph is	vs of the State of s true and correct.
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·	(Signature)	(Date)
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Witness # 2:		
	(Signature)	(Date)
	(Print Name)	
Inventor:		
	(Signature)	(Date)

Kevin McGrath (Print Name)

Inventor:		
	(Signature)	(Date)
Sebastien Nussbaur	<u>m</u> (Print Name)	
State of County of		
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(NOTARY SEAL)	Signature:	

within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of

	that the foregoing paragraph is true	and correct.
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(NOTARY SEAL)	Signature:	
Witness # 1∜		
	(Signature)(Print Name)	(Date)
Witness # 2:		
	(Signature)(Print Name)	(Date)
Inventor:	(Signatura)	(Data)
Rex McCrary (Print N	(Signature) ame)	(Date)

	(Print Name)
Inventor:	
	(Signature)(Date)
Philip J. Rogers (Print	
State of	,
County of	
On(insert date)	before me,
personally appeared Philip J. evidence to be the persor instrument and acknowledghis/her/their authorized capa	name and title of the notarizing officer)  Rogers, who proved to me on the basis of satisfactory (s) whose name(s) is/are subscribed to the withir ed to me that he/she/they executed the same ir city(ies), and that by his/her/their signature(s) on the the entity upon behalf of which the person(s) acted
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personally appeared <u>Mark Leather</u>, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

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reexamination, and substitute applications,

PATENT

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	F PERJURY under the laws of the State of the the state of the foregoing paragraph is true and correct.
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Witness # 1:	
	(Signature)(Date)
Witness # 2:	
	(Signature)(Date)
	(Print Name)

Inventor:			
	(Signature)	(Date)	
<u>Michael Mantor</u> (Print N	lame)		
State of	)		
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	(Signature)	(Date)
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Witness # 2:		
		(Date)
	(Print Name)	
Inventor:		
	(Signature)	(Date)
<u>Thomas Roy Woller</u> (F	Print Name)	
State of	)	
County of	)	
On(insert date)	before me,	

(insert name and title of the notarizing officer)

personally appeared <u>Thomas Roy Woller</u>, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the

instrument the person(s), or t executed the instrument.	the entity upon behalf of which the person(s) acted,
I certify under PENALTY	OF PERJURY under the laws of the State of that the foregoing paragraph is true and correct.
WITNESS my hand and officia	l seal.
(NOTARY SEAL)	Signature:
Witness # 1:	
	(Signature)(Date)(Print Name)
Witness # 2:	
	(Signature)(Date)(Print Name)
Inventor:	(Signature) 3/23/12 (Date)

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before me, (insert date)	On(insert
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ersonally appeared Kevin McGrath, who proved to me on the basis of satisfactory idence to be the person(s) whose name(s) is/are subscribed to the within strument and acknowledged to me that he/she/they executed the same in s/her/their authorized capacity(ies), and that by his/her/their signature(s) on the strument the person(s), or the entity upon behalf of which the person(s) acted, the instrument.	evidence to be the strument and a nis/her/their authornstrument the per
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Witness # 2:  (Signature)  (Signature)  (Print Name)  REEL: 027987 FRAME: 0755	Witness # 2  Kaillin

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ii) sign all lawful papers,

iii) execute all divisional, continuation, continuation-in-part, reissue,

reexamination, and substitute applications,

PATENT

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- iv) make all lawful oaths, and assist in vesting title in the Assignee and to aid the Assignee to obtain and enforce proper protection for the subject matter of the Invention(s) in all countries and regions, and
- v) notify Assignee promptly (by facsimile or first class mail) of any subpoena or contact by any person other than Assignee or its agents regarding the Invention or resultant patent(s) issuing therefrom, and in any event at least one week prior to any deposition, legal inquiry or legal proceeding relating to the above identified invention.

Inis	assignment	is executed	on the	date(s)	of which	n the	inventor(s)	na
signed.								
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Inventor:								
	•		(Signatı	ıre)			(Date)	
Scot	tt Hartog (Prin	t Name)	. (9	,			(= 0.00)	
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On	(insert date)	bef	ore me,					
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(insert name and title of the notarizing officer)

personally appeared <u>Scott Hartog</u>, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENAL	TY OF PERJURY under the laws that the foregoing paragraph is	
WITNESS my hand and o	official seal.	
(NOTARY SEAL)	Signature:	
Witness # 1:		
	(Signature)	(Date)
<del> </del>	(Print Name)	
Witness # 2:		
	(Signature) (Print Name)	(Date)
Inventor:		
	(Signature)	(Date)
Ralph Clay Taylor	(Print Name)	
State of	)	

Count	y of	<b>)</b>
On	(insert date)	before me,
	(ir	ert name and title of the notarizing officer)
satisfa within his/he instrur	actory evidence to instrument and ac r/their authorized o	ch Clay Taylor, who proved to me on the basis of the person(s) whose name(s) is/are subscribed to the nowledged to me that he/she/they executed the same in pacity(ies), and that by his/her/their signature(s) on the or the entity upon behalf of which the person(s) acted
I cert		Y OF PERJURY under the laws of the State of the State of the the foregoing paragraph is true and correct.
WITNI	ESS my hand and c	ficial seal.
(NOTA	ARY SEAL)	Signature:
	Witness # 1:	
		(Signature)(Date
		(Print Name)
	Witness # 2:	
		(Signature)(Date
		(Print Name)

Inventor:		
	_ (Signature) (Date	e)
Michael Mantor (Print Name)		
State of	)	
County of	)	
On bef (insert date)	ofore me,	
personally appeared Michael Manto evidence to be the person(s) wh instrument and acknowledged to his/her/their authorized capacity(ies	e and title of the notarizing officer)  or, who proved to me on the basis of sathose name(s) is/are subscribed to the me that he/she/they executed the s), and that by his/her/their signature(sentity upon behalf of which the person(	ne within same ir s) on the
	PERJURY under the laws of the at the foregoing paragraph is true and co	
WITNESS my hand and official seal.	l.	
(NOTARY SEAL) Siç	ignature:	
Witness # 1:		

	(Signature)	(Date)
	(Print Name)	
Witness # 2:		
	(Signature)	(Date)
	(Print Name)	
Inventor:		
The Waln	_ (Signature) $2/2/20$	<b>∕⊋</b> (Date)
Thomas Roy Woller (Print N		(2010)
State ofexas	)	
County of Travis	)	
On February 2,2012 b (insert date)	efore me,	
Joan D. Schuster,	Senior Administra	tar
	e and title of the notarizing office	

personally appeared <u>Thomas Roy Woller</u>, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the

instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.
I certify under PENALTY OF PERJURY under the laws of the State of that the foregoing paragraph is true and correct.
WITNESS my hand and official seal.
JOAN D SCHUSTER My Commission Expires SEAlanuary 21, 2014 Signature:
Witness # 1:
(Signature) (Date)
(Print Name)
Witness # 2:
(Signature)(Date)
(Print Name)
Inventor:
(Signature)(Date)
Kevin McGrath (Print Name)

State of	)	
County of	)	
On(insert date)	before me,	
(ins	sert name and title of the notarizing office	er)
evidence to be the persinstrument and acknowle his/her/their authorized ca	n McGrath, who proved to me on the beson(s) whose name(s) is/are subscrivedged to me that he/she/they execupacity(ies), and that by his/her/their sor the entity upon behalf of which the	bed to the withing uted the same in signature(s) on the
•	Y OF PERJURY under the laws that the foregoing paragraph is tr	
WITNESS my hand and of	ficial seal.	
(NOTARY SEAL)	Signature:	
Witness # 1:		
	(Signature)	(Date)
	(Print Name)	
Witness # 2:		
<b>-</b>	(Signature)	(Date)
	(Print Name)	

Inventor:		
	(Signature)	(Date)
Sebastien Nussbau	um (Print Name)	
State of	)	
County of	)	
On(insert date)	before me,	
(in:	sert name and title of the notarizing	officer)
satisfactory evidence to be within instrument and ack his/her/their authorized co	pastien Nussbaum, who proved to the person(s) whose name(s) is knowledged to me that he/she/they apacity(ies), and that by his/her/they or the entity upon behalf of which	s/are subscribed to the y executed the same in neir signature(s) on the
I certify under PENAL	TY OF PERJURY under the that the that the foregoing paragraph	
WITNESS my hand and o	fficial seal.	
(NOTARY SEAL)	Signature:	

Witness # 1:		
	(Signature)	(Date)
	(Print Name)	
Witness # 2:		
	(Signature)	(Date)
	(Print Name)	
Inventor:		
	(Signature)	_ (Date)
Nuwan S. Jayasena	a (Print Name)	
State of	)	
County of	)	
On(insert date)	before me,	
	cort name and title of the notarizing officer)	

(insert name and title of the notarizing officer)

personally appeared <u>Nuwan S. Jayasena</u>, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the

his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument. I certify under PENALTY OF PERJURY under the laws of the State of \_\_\_\_\_ that the foregoing paragraph is true and correct. WITNESS my hand and official seal. (NOTARY SEAL) Signature: Witness # 1: (Signature) \_\_\_\_ (Date) \_\_\_\_\_(Print Name) Witness # 2: (Signature) (Date) \_\_\_\_ (Print Name) Inventor: \_\_\_\_ (Signature) (Date)

Rex McCrary (Print Name)

within instrument and acknowledged to me that he/she/they executed the same in

State of	)	
County of	)	
On(insert date)	before me,	
(inse	ert name and title of the notarizing off	icer)
evidence to be the perso instrument and acknowled his/her/their authorized cap	McCrary, who proved to me on the on(s) whose name(s) is/are subsolged to me that he/she/they exepacity(ies), and that by his/her/their or the entity upon behalf of which the	cribed to the within cuted the same in signature(s) on the
	OF PERJURY under the laws	
WITNESS my hand and office	cial seal.	
(NOTARY SEAL)	Signature:	
Witness # 1:		
	(Signature) (Print Name)	(Date)
Witness # 2:		
	(Signature)	(Date)

(Print Name)							
Inventor:							
	(Signature)	(Date)					
Philip J. Rogers (Print N	lame)						
State of	)						
County of	)						
On(insert date)	before me,						
personally appeared Philip J. February 2015 evidence to be the person(sinstrument and acknowledge his/her/their authorized capac	s) whose name(s) d to me that he/s ity(ies), and that by	notarizing officer) to me on the basis of satisfactory is/are subscribed to the withir he/they executed the same ir his/her/their signature(s) on the alf of which the person(s) acted					
		er the laws of the State or paragraph is true and correct.					
WITNESS my hand and official	l seal.						
(NOTARY SEAL)	Signature:						

Witness # 1:		
	(Signature)	(Date
	(Print Name)	
Witness # 2:		
	(Signature)	(Date
	(Print Name)	
nventor:		
	(Signature)	(Date)
Mark Leather (Print Nam		(= 3.33)
State of	)	
County of	)	
On (insert date)	_ before me,	
(insert n	ame and title of the notarizing office	cer)

personally appeared <u>Mark Leather</u>, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

	_		PENALTY		PERJURY nat the foreg					of
W	'ITNES	S my ha	ınd and offici	al se	al.					
(N	IOTAR'	Y SEAL)	)	•	Signature: _					_
	W	itness#	1:							
					(Si	gnature			(Dat	æ)
	——————————————————————————————————————	itness#	2:		-	gnature	-		(Dat	te)

1477810\_1

AMD Reference No. 100637

#### ASSIGNMENT OF PATENT RIGHTS

This is an assignment of patent rights between inventor(s) (1.) Scott Hartog, (2.) Ralph Clay Taylor, (3.) Michael Mantor, (4.) Thomas Roy Woller, (5.) Kevin McGrath, (6.) Sebastien Nussbaum, (7.) Nuwan S. Jayasena, (8.) Rex McCrary, (9.) Philip J. Rogers, and (10.) Mark Leather (hereinafter referred to as the "Inventor(s)") and Advanced Micro Devices, Inc., having a place of business at One AMD Place, Sunnyvale, California, USA (hereinafter referred to as the "Assignee").

WHEREAS, Inventor(s) are named as inventors in the patent application filed in the USA on December 14, 2011, entitled Software Mechanisms For Managing Task Scheduling On An Accelerated Processing Device (APD), having application no. <u>13/325,755</u>, and having a docket number of **1972.2320000** (hereinafter referred to as the "Application"); and

WHEREAS, Assignee has a desire to acquire all rights, title, and interest in the invention(s) disclosed in the Application (hereinafter referred to as the "Invention(s)"), including any rights, title, and interest in the Invention(s) not previously transferred to Assignee through prior agreement.

NOW, THEREFORE, the parties agree as follows:

- 1. To the extent that Inventor(s) are subject to a prior agreement transferring rights, title, and/or interest in the Invention(s) to the Assignee, Inventor(s) hereby confirm such transfer.
- 2. To the extent that Inventor(s) retain any rights, title, or interest in the Invention(s) not vested in the Assignee on the date(s) of execution of this Assignment, Inventor(s) hereby assign and otherwise transfer to the Assignee their entire right, title, and interest, throughout the world, in and to: the Invention(s), including any patent applications, patents, invention registrations, and equivalents thereof (including any and all provisional, international, regional, and national patents and patent applications, and all divisions, continuations, continuations-in-part, renewals, reissues, reexams, substitutes and extensions thereof), for the Invention(s) and all rights to claim priority thereto. Inventor(s) further assign and

AMD Reference No. 100637

otherwise transfer to Assignee all causes of action and remedies arising under any

patent or patent application for the Invention(s) prior to, on, or after the date(s) of

execution of this Assignment. Inventor(s) shall not be entitled to an accounting for

any causes of action or remedies pursued by Assignee.

3. The transfers set forth in Paragraphs 1 and 2 above are in

consideration for the sum of at least one U.S. dollar (US\$1) (or its equivalent) and/or

other consideration for which both parties acknowledge to be valuable. Such

consideration includes but is not limited to at least one of the following: employment,

an independent contractor agreement, monetary payment, or other benefit hereby

acknowledged as received.

4. Inventor(s) hereby authorize and request the Commissioner of Patents

and Trademarks, or equivalent thereof, to issue the patent for the Invention, and all

resulting patents therefrom, insofar as the Inventor(s)' interest is concerned, to the

Assignee.

5. Inventor(s) further agree to execute any and all powers of attorney,

applications, assignments, declarations, affidavits, and any other papers in

connection therewith necessary to perfect Assignee's rights, title, and interest in the

Invention(s).

6. Inventor(s) hereby authorize Assignee, its successors and assigns, its

legal representatives, or anyone the Assignee may properly designate, to insert in

this Assignment of Patent Rights the filing date and/or application number of the

Application when ascertained.

7. Inventor(s) hereby further agree to, with respect to any patent

application or patent for the Invention(s), at the expense of the Assignee:

i) testify in any legal proceedings,

ii) sign all lawful papers,

iii) execute all divisional, continuation, continuation-in-part, reissue,

reexamination, and substitute applications,

PATENT

**REEL: 027987 FRAME: 0773** 

- iv) make all lawful oaths, and assist in vesting title in the Assignee and to aid the Assignee to obtain and enforce proper protection for the subject matter of the Invention(s) in all countries and regions, and
- v) notify Assignee promptly (by facsimile or first class mail) of any subpoena or contact by any person other than Assignee or its agents regarding the Invention or resultant patent(s) issuing therefrom, and in any event at least one week prior to any deposition, legal inquiry or legal proceeding relating to the above identified invention.

This assignment is executed on the date(s) of which the Inventor(s) have signed.

Inventor:

(Signature)

Scott Hartog (Print Name)

State of Massachusa

County of Mid

before me,

(insert name and title of the notarizing officer)

personally appeared Scott Hartog, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

CHRISTINE F. McDADE NOINT PLANT COMMONWEATHER MASTACHASETTS My Commission Expires April 30, 2015	Signature:	1 hole
Witness # 1:		
	(Signature) (Print Name)	(Date)
Witness # 2:		
	(Signature) (Print Name)	(Date)
Inventor:		

\_\_\_\_\_(Signature) \_\_\_\_\_(Date)

State of \_\_\_\_\_\_)

Ralph Clay Taylor (Print Name)

County of	)
On(insert date)	_ before me,
(insert date)	
(insert na	ame and title of the notarizing officer)
satisfactory evidence to be the within instrument and acknowle his/her/their authorized capacity	lay Taylor, who proved to me on the basis of person(s) whose name(s) is/are subscribed to the edged to me that he/she/they executed the same in y(ies), and that by his/her/their signature(s) on the e entity upon behalf of which the person(s) acted
	F PERJURY under the laws of the State of the the state of the foregoing paragraph is true and correct.
WITNESS my hand and official s	seal.
(NOTARY SEAL)	Signature:
Witness # 1:	
	(Signature)(Date)
	(Print Name)
Witness # 2:	
	(Signature)(Date)
	(Print Name)

Inventor:	
	(Signature)(Date)
Michael Mantor (Print Name)	
State of	)
County of	)
On bef (insert date)	ore me,
(insert name	and title of the notarizing officer)
evidence to be the person(s) whinstrument and acknowledged to his/her/their authorized capacity(ies	r, who proved to me on the basis of satisfactory nose name(s) is/are subscribed to the within me that he/she/they executed the same in s), and that by his/her/their signature(s) on the ntity upon behalf of which the person(s) acted
	PERJURY under the laws of the State out the foregoing paragraph is true and correct.
WITNESS my hand and official seal.	
(NOTARY SEAL) Sign	gnature:
Witness # 1:	

	(Signature)	(Date)
	(Print Name)	
Witness # 2:		
	(Signature) (Print Name)	(Date)
Inventor:		
	(Signature)	(Date)
Thomas Roy Woller (P	rint Name)	
State of		
County of	)	
On (insert date)	before me,	

(insert name and title of the notarizing officer)

personally appeared <u>Thomas Roy Woller</u>, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the

instr exec	umen cuted	it the p the inst	erson(s), or rument.	the	entity ι	ıpon	behalf	of wh	nich th	е ре	erson	(s) a	cted,
			PENALTY										
WIT	NESS	S my ha	nd and offici	al se	al.								
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						_ (Pi	rint Nan	ne)					
	Wi	tness #	2:										
						(Si	ignature	∋)				_ (D	ate)
		<u>.</u>	-			_ (P	rint Nan	ne)					
Inve	ntor:												
			A		(Sig	natur	e)				_ (Dat	æ)	
	<u>Ke</u>	vin Mc	<u> Grath</u> (Print I	Name	∍)								

State of	)	
County of	)	
On be (insert date)	efore me,	
(insert name personally appeared Kevin McGratevidence to be the person(s) winstrument and acknowledged to his/her/their authorized capacity(ie) instrument the person(s), or the executed the instrument.  I certify under PENALTY OF the winstrument the person that the certify under person that the certify under person that the witness my hand and official search	whose name(s) is/are subscribed me that he/she/they executes), and that by his/her/their significantity upon behalf of which the PERJURY under the laws that the foregoing paragraph is true.	asis of satisfactory bed to the within ted the same in gnature(s) on the e person(s) acted, of the State of
(NOTARY SEAL) S	Signature:	
Witness # 1:		
	(Signature) (Print Name)	(Date)
Witness # 2:		
	(Signature)	(Date)
	(Print Name)	

Inventor:

(Signature)

Feb 23 (2012 (Date)

Sebastien Nussbaum (Print Name)

State of Mcssachusetts

County of Middlesex

On 2/3/2010 before me,

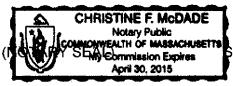
Christino F. McDade - Exec Assta Notary

(insert name and title of the notarizing officer)

personally appeared <u>Sebastien Nussbaum</u>, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of Wassach Soft that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.



Signature: \_\_\_\_\_

Witness # 1:		
	(Signature)	(Date)
	(Print Name)	
Witness # 2:		
	(Signature)	(Date)
	(Print Name)	
Inventor:		
	(Signature)	_ (Date)
Nuwan S. Jayasen		- (
State of	)	
County of	)	
On(insert date)	before me,	
(in	nsert name and title of the notarizing officer)	

personally appeared <u>Nuwan S. Jayasena</u>, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the

within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

certify	under	PENALTY	OF PERJU that the fo	RY under the pregoing paragra	laws of aph is true a	the State of nd correct.
		nd and offici				
(NOTAF	RY SEAL)	)	Signatur	e:		
V	Vitness #	1:				
<u>-</u>				_ (Signature) _ (Print Name)		(Date)
V	Vitness #	2:				
-				_ (Signature) _ (Print Name)		(Date)
Inventor	<del>-:</del>					
<u>F</u>	Rex McCı	<u>arv</u> (Print Na		ature)		_ (Date)

State of	)	
County of	)	
On(insert date)	before me,	
(insert	name and title of the notarizing offic	er)
evidence to be the persone instrument and acknowledge his/her/their authorized capaci	Crary, who proved to me on the b (s) whose name(s) is/are subscried to me that he/she/they exect city(ies), and that by his/her/their s the entity upon behalf of which th	ibed to the withir uted the same ir signature(s) on the
	OF PERJURY under the laws that the foregoing paragraph is to	
WITNESS my hand and officia	al seal.	
(NOTARY SEAL)	Signature:	
Witness # 1:		
	(Signature)	(Date)
	(Print Name)	
Witness # 2:		
	(Signature)	(Date)

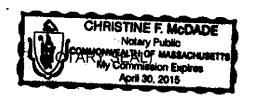
(Print Name)
Inventor:
Mily for (Signature) 2/10/2012 (Date)
Philip J. Rogers (Print Name)
State of Massachusotts
County of Middlossx
On <u>210/2013</u> before me, (insert date)
Christine F. McDade - Exec. Asst/ Woter y
(insert name and title of the notarizing officer)
personally appeared Philip J. Rogers, who proved to me on the basis of satisfactory

evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the

instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.



Signature:

Witness # 1:		
	(Signature)	(Date)
	(Print Name)	
Witness # 2:		
	(Signature)	(Date)
	(Print Name)	
Inventor:		
	_(Signature)	(Date)
Mark Leather (Print Name)	-	
State of		
County of		
On be (insert date)	fore me,	

(insert name and title of the notarizing officer)

personally appeared Mark Leather, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

	TY OF PERJURY under the laws of the State that the foregoing paragraph is true and correct.	of
WITNESS my hand and o	fficial seal.	
(NOTARY SEAL)	Signature:	_
Witness # 1:		
	(Signature) (Da	te)
Witness # 2:	(Print Name)	
	(Signature)(Da	te)
-	(Print Name)	

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AMD Reference No. 100637

## **ASSIGNMENT OF PATENT RIGHTS**

This is an assignment of patent rights between inventor(s) (1.) Scott Hartog, (2.) Ralph Clay Taylor, (3.) Michael Mantor, (4.) Thomas Roy Woller, (5.) Kevin McGrath, (6.) Sebastien Nussbaum, (7.) Nuwan S. Jayasena, (8.) Rex McCrary, (9.) Philip J. Rogers, and (10.) Mark Leather (hereinafter referred to as the "Inventor(s)") and Advanced Micro Devices, Inc., having a place of business at One AMD Place. Sunnyvale. California, USA (hereinafter referred to as the "Assignee").

WHEREAS, Inventor(s) are named as inventors in the patent application filed in the USA on December 14, 2011, entitled Software Mechanisms For Managing Task Scheduling On An Accelerated Processing Device (APD), having application no. 13/325,755, and having a docket number of 1972.2320000 (hereinafter referred to as the "Application"); and

WHEREAS, Assignee has a desire to acquire all rights, title, and interest in the invention(s) disclosed in the Application (hereinafter referred to as the "Invention(s)"), including any rights, title, and interest in the Invention(s) not previously transferred to Assignee through prior agreement.

NOW, THEREFORE, the parties agree as follows:

- 1. To the extent that Inventor(s) are subject to a prior agreement transferring rights, title, and/or interest in the Invention(s) to the Assignee, Inventor(s) hereby confirm such transfer.
- 2. To the extent that Inventor(s) retain any rights, title, or interest in the Invention(s) not vested in the Assignee on the date(s) of execution of this Assignment, Inventor(s) hereby assign and otherwise transfer to the Assignee their entire right, title, and interest, throughout the world, in and to: the Invention(s), including any patent applications, patents, invention registrations, and equivalents thereof (including any and all provisional, international, regional, and national patents and patent applications, and all divisions, continuations, continuations-in-part, renewals, reissues, reexams, substitutes and extensions thereof), for the Invention(s) and all rights to claim priority thereto. Inventor(s) further assign and

AMD Reference No. 100637

otherwise transfer to Assignee all causes of action and remedies arising under any

patent or patent application for the Invention(s) prior to, on, or after the date(s) of

execution of this Assignment. Inventor(s) shall not be entitled to an accounting for

any causes of action or remedies pursued by Assignee.

3. The transfers set forth in Paragraphs 1 and 2 above are in

consideration for the sum of at least one U.S. dollar (US\$1) (or its equivalent) and/or

other consideration for which both parties acknowledge to be valuable. Such

consideration includes but is not limited to at least one of the following: employment,

an independent contractor agreement, monetary payment, or other benefit hereby

acknowledged as received.

4. Inventor(s) hereby authorize and request the Commissioner of Patents

and Trademarks, or equivalent thereof, to issue the patent for the Invention, and all

resulting patents therefrom, insofar as the Inventor(s)' interest is concerned, to the

Assignee.

5. Inventor(s) further agree to execute any and all powers of attorney,

applications, assignments, declarations, affidavits, and any other papers in

connection therewith necessary to perfect Assignee's rights, title, and interest in the

Invention(s).

Inventor(s) hereby authorize Assignee, its successors and assigns, its

legal representatives, or anyone the Assignee may properly designate, to insert in

this Assignment of Patent Rights the filing date and/or application number of the

Application when ascertained.

7. Inventor(s) hereby further agree to, with respect to any patent

application or patent for the Invention(s), at the expense of the Assignee:

i) testify in any legal proceedings,

ii) sign all lawful papers,

iii) execute all divisional, continuation, continuation-in-part, reissue,

reexamination, and substitute applications,

PATENT

- iv) make all lawful oaths, and assist in vesting title in the Assignee and to aid the Assignee to obtain and enforce proper protection for the subject matter of the Invention(s) in all countries and regions, and
- v) notify Assignee promptly (by facsimile or first class mail) of any subpoena or contact by any person other than Assignee or its agents regarding the Invention or resultant patent(s) issuing therefrom, and in any event at least one week prior to any deposition, legal inquiry or legal proceeding relating to the above identified invention.

	This	assignmer	nt is	executed	on	the	date(s)	of	which	the	Inventor(s)	have
signed	d.											
Invent	or:											
					(Sig	ınatı	ıre)				(Date)	
***************************************		t Hartog (P					,	, Addition				
State	of						)					
	·, ··											
On	******			befo	ore i	me,						
		(insert date	∌)									

(insert name and title of the notarizing officer)

personally appeared <u>Scott Hartog</u>, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I cer	tify under	PENALTY	OF PERJU	JRY under the oregoing paragra	laws of the State of ph is true and correct.
		and and offic			
(NOT	ARY SEAL	-)	Signatur	e:	
	Witness #	<b># 1</b> ;:			
				(Signature) (Print Name)	(Date)
	Witness #	<b>‡</b> 2:			
				(Signature) (Print Name)	(Date)
Inven	tor:				
		a <u>y Taylor</u> (Pr		nature)	(Date)
State	of			ÿ	

County of	)
On before (insert date)	pre me,
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satisfactory evidence to be the pers within instrument and acknowledged his/her/their authorized capacity(ies)	Taylor, who proved to me on the basis of son(s) whose name(s) is/are subscribed to the it to me that he/she/they executed the same in and that by his/her/their signature(s) on the tity upon behalf of which the person(s) acted,
I certify under PENALTY OF P	ERJURY under the laws of the State of the foregoing paragraph is true and correct.
WITNESS my hand and official seal.  (NOTARY SEAL) Sig	nature:
Witness # 1>	
	(Signature)(Date)
Witness # 2	
	(Signature)(Date)
	(Print Name)

Inventor:			
	(Signature)	(Date)	
Michael Mantor (Prin			
State of	)		
County of	)		
On(insert date)			
***************************************	ert name and title of the		
evidence to be the person instrument and acknowled his/her/their authorized cap	on(s) whose name(s) dged to me that he/ oacity(ies), and that by	d to me on the basis of satisfactor is/are subscribed to the within/she/they executed the same in the same is his/her/their signature(s) on the half of which the person(s) acted	n n e
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<del></del>	(Signature)	(Date)
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Witness # 2:		
·····	(Signature)	(Date)
	(Print Name)	
Inventor:		
	(Signature)	(Date)
Thomas Roy Woll		
State of		
County of	)	
On(insert date)	before me,	
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personally appeared <u>Thomas Roy Woller</u>, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the

(insert name and title of the notarizing officer)

instrument the persor executed the instrume	n(s), or the entity upon behalf of which thent.	he person(s) acted,
I certify under PEN	NALTY OF PERJURY under the laws	of the State of true and correct.
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	(Signature)	(Date)
	(Print Name)	
Witness # 2		
	(Signature)	(Date)
	(Print Name)	
Inventor:		
	(Signature)	(Date)
Kevin McGrath	լ (Print Name)	

State of	)	
County of	)	
On befor (insert date)	re me,	
(insert name as personally appeared Kevin McGrath, evidence to be the person(s) who instrument and acknowledged to mis/her/their authorized capacity(ies), instrument the person(s), or the enti executed the instrument.  I certify under PENALTY OF PE that is	se name(s) is/are subscribed ne that he/she/they executed and that by his/her/their signat ty upon behalf of which the pe  RJURY under the laws of	to the within the same in ture(s) on the rson(s) acted, the State of
(NOTARY SEAL) Sign	nature;	······································
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Witness # 2:		
	(Signature)	(Date)
	(Print Name)	

Inventor:		
	(Signature)	(Date)
Sebastien Nussbaur	<u>m</u> (Print Name)	
State of		
County of	,)	
On(insert date)	before me,	
(ins	ert name and title of the notal	rizing officer)
satisfactory evidence to be within instrument and acker his/her/their authorized ca	astien Nussbaum, who prove the person(s) whose name nowledged to me that he/she pacity(ies), and that by his/ or the entity upon behalf of	e(s) is/are subscribed to the e/they executed the same ir her/their signature(s) on the
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Witness # 2			
	(Signatu	ure)	(Date)
	(Print N	ame)	
Inventor:			
	(Signature)	·	(Date)
<u>Nuwan S. Jayasena</u> (P	rint Name)		
State of	)		
County of			
On(insert date)	before me,		

(insert name and title of the notarizing officer)

personally appeared <u>Nuwan S. Jayasena</u>, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the

within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

l certi	fy under	PENALTY	OF PERJUI	RY under the regoing paragra	e laws of aph is true a	the State of nd correct.
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,	Witness #	<b>2</b> ;				
સ				(Signature) (Print Name)		(Date)
Invento	or:					
<u></u>				ature)		ຼ (Date)
	Rex McCr	ary (Print Na	ame)			

State of	)	
County of	)	
On(insert date)	before me,	
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evidence to be the person(sinstrument and acknowledge his/her/their authorized capac	<u>Orary</u> , who proved to me on the basis of sames) whose name(s) is/are subscribed to the distribution to the to me that he/she/they executed the city(ies), and that by his/her/their signature(the entity upon behalf of which the person	he within same in s) on the
	OF PERJURY under the laws of the that the foregoing paragraph is true and co	
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	(Controlled to the Control)	
Witness # 2:		
	(Signature)	(Date)

	(Print Name)	
Inventor:		
	(Signature) (Date)	
Philip J. Rogers (Pri	nt Name)	
State of		
County of		
On(insert date)	before me,	
	ert name and title of the notarizing officer)	
personally appeared Philip evidence to be the pers instrument and acknowle his/her/their authorized ca	o J. Rogers, who proved to me on the basis of satisf son(s) whose name(s) is/are subscribed to the edged to me that he/she/they executed the satisfacity(ies), and that by his/her/their signature(s) or the entity upon behalf of which the person(s)	withing me in on the
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Witness # 1:		
	(Signature)	(Date)
<u></u>	(Print Name)	
Witness # 2:		
	(Signature) (Print Name)	
Inventor:		
Mar Lower	(Signature)	3/30/12(Date)
Mark Leather (Print Name)		
State of California	<u> </u>	
County of Santa Cla	LLL	
On March 30, 30/2 ber (insert date)	fore me,	ra viš
	and title of the notar	

personally appeared Mark Leather, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/ere subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s) or the entity upon behalf of which the person(s) acted, executed the instrument.

Certify under PENALTY O	F PERJURY that the fore	under going par	the agrap	laws h is tr	of the ue and	State correct.	of
WITNESS my hand and official s	seal.						
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	Witness # 1:
	(Signature) (Date)
	(Print Name)
	Witness # 2:
٠	(Signature)(Date)
Invent	or:
	N.S. Javasena (Signature) 2/3/12 (Date)  Nuwan S. Jayasena (Print Name)
	of California
County	y of Santa Clara
On <u>/ E</u>	y of Santa Clara  Bruary 3,2012 before me,  (insert date)  Rith S. Marguis  (insert name and title of the notarizing officer)
	(insert name and title of the notarizing officer)

personally appeared Nuwan S. Jayasena, who proved to me on the basis of satisfactory evidence to be the person( $\not$ s) whose name( $\not$ s) is/are-subscribed to the

his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument. certify, under PENALTY OF PERJURY under the laws of the State of that the foregoing paragraph is true and correct. WITNESS my hand and official seal. (NOTARY SEAL) Signature: RITA S. MARQUIS COMM. # 1879351 NOTARY PUBLIC - CALIFORNIA SANTA CLARA COUNTY Witness # 1: COMM. EXPIRES FEB. 5, 2014 \_\_ (Signature) (Date) (Print Name) Witness # 2: \_\_\_\_\_ (Signature) \_\_\_\_(Date) (Print Name) Inventor:

(Signature)

Rex McCrary (Print Name)

within instrument and acknowledged to me that he/she/they-executed the same in

PATENT REEL: 027987 FRAME: 0805

(Date)

AMD Reference No. 100637

## ASSIGNMENT OF PATENT RIGHTS

This is an assignment of patent rights between inventor(s) (1.) Scott Hartog, (2.) Ralph Clay Taylor, (3.) Michael Mantor, (4.) Thomas Roy Woller, (5.) Kevin McGrath, (6.) Sebastien Nussbaum, (7.) Nuwan S. Jayasena, (8.) Rex McCrary, (9.) Philip J. Rogers, and (10.) Mark Leather (hereinafter referred to as the "Inventor(s)") and Advanced Micro Devices, Inc., having a place of business at One AMD Place, Sunnyvale, California, USA (hereinafter referred to as the "Assignee").

WHEREAS, Inventor(s) are named as inventors in the patent application filed in the USA on December 14, 2011, entitled Software Mechanisms For Managing Task Scheduling On An Accelerated Processing Device (APD), having application no. 13/325,755, and having a docket number of 1972.2320000 (hereinafter referred to as the "Application"); and

WHEREAS, Assignee has a desire to acquire all rights, title, and interest in the invention(s) disclosed in the Application (hereinafter referred to as the "Invention(s)"), including any rights, title, and interest in the Invention(s) not previously transferred to Assignee through prior agreement.

NOW, THEREFORE, the parties agree as follows:

- 1. To the extent that Inventor(s) are subject to a prior agreement transferring rights, title, and/or interest in the Invention(s) to the Assignee, Inventor(s) hereby confirm such transfer.
- 2. To the extent that Inventor(s) retain any rights, title, or interest in the Invention(s) not vested in the Assignee on the date(s) of execution of this Assignment, Inventor(s) hereby assign and otherwise transfer to the Assignee their entire right, title, and interest, throughout the world, in and to: the Invention(s), including any patent applications, patents, invention registrations, and equivalents thereof (including any and all provisional, international, regional, and national patents and patent applications, and all divisions, continuations, continuations-in-part, renewals, reissues, reexams, substitutes and extensions thereof), for the Invention(s) and all rights to claim priority thereto. Inventor(s) further assign and

AMD Reference No. 100637

otherwise transfer to Assignee all causes of action and remedies arising under any

patent or patent application for the Invention(s) prior to, on, or after the date(s) of

execution of this Assignment. Inventor(s) shall not be entitled to an accounting for

any causes of action or remedies pursued by Assignee.

3. The transfers set forth in Paragraphs 1 and 2 above are in

consideration for the sum of at least one U.S. dollar (US\$1) (or its equivalent) and/or

other consideration for which both parties acknowledge to be valuable. Such

consideration includes but is not limited to at least one of the following: employment,

an independent contractor agreement, monetary payment, or other benefit hereby

acknowledged as received.

4. Inventor(s) hereby authorize and request the Commissioner of Patents

and Trademarks, or equivalent thereof, to issue the patent for the Invention, and all

resulting patents therefrom, insofar as the Inventor(s)' interest is concerned, to the

Assignee.

5. Inventor(s) further agree to execute any and all powers of attorney,

applications, assignments, declarations, affidavits, and any other papers in

connection therewith necessary to perfect Assignee's rights, title, and interest in the

Invention(s).

6. Inventor(s) hereby authorize Assignee, its successors and assigns, its

legal representatives, or anyone the Assignee may properly designate, to insert in

this Assignment of Patent Rights the filing date and/or application number of the

Application when ascertained.

7. Inventor(s) hereby further agree to, with respect to any patent

application or patent for the Invention(s), at the expense of the Assignee:

i) testify in any legal proceedings,

ii) sign all lawful papers,

iii) execute all divisional, continuation, continuation-in-part, reissue,

reexamination, and substitute applications,

PATENT

REEL: 027987 FRAME: 0807

- iv) make all lawful oaths, and assist in vesting title in the Assignee and to aid the Assignee to obtain and enforce proper protection for the subject matter of the Invention(s) in all countries and regions, and
- v) notify Assignee promptly (by facsimile or first class mail) of any subpoena or contact by any person other than Assignee or its agents regarding the Invention or resultant patent(s) issuing therefrom, and in any event at least one week prior to any deposition, legal inquiry or legal proceeding relating to the above identified invention.

This assignment is executed on the date(s) of which the Inventor(s) have signed.

Inventor:		
	_ (Signature)	(Date)
Scott Hartog (Print Name)		
Otata of	,	
State of		
County of	)	
On be (insert date)	fore me,	

(insert name and title of the notarizing officer)

personally appeared <u>Scott Hartog</u>, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of that the foregoing paragraph is true and correct.
WITNESS my hand and official seal.
JENNIE LEANNA WILSON MY COMMISSION # DD993794 EXPIRES May 20, 2014 [407) 398-0153 FloridaNotaryService.com  (NOTARY SEAL)  Signature:
Witness # 1:
(Signature)(Date)
Witness # 2:
(Signature) (Date)
(Print Name)
Inventor:
(Signature) 3/22/12 (Date)  Ralph Clay Taylor (Print Name) RALPH TAYLOR
State of Hon Ja

County of Orange	
On 3/30/2018 before me, (insert date)  Fennie Leanna Wilson	n Receptionist 1
(insert name and title of	the notarizing officer)
personally appeared Ralph Clay Taylor, who satisfactory evidence to be the person(s) who within instrument and acknowledged to me the his/her/their authorized capacity(ies), and that instrument the person(s), or the entity upon executed the instrument.	ese name(s) is/are subscribed to the at he/she/they executed the same in t by his/her/their signature(s) on the
I certify under PENALTY OF PERJURY that the forego	under the laws of the State of ping paragraph is true and correct.
WITNESS my hand and official seal.	
VILSON  AC OFF DD993794  AC SC May 20, 2014  A NotaryService.com  (407) 398	JENNIE LEANNA WILSON  MY COMMISSION # DD993794  EXPIRES May 20, 2014  Plorida Notary Service.com
(NOTARY SEAL) Signature:	SENTEL SUNCE NEW
Witness # 1:	
(Sig	gnature)(Date)
(Pri	nt Name)
Witness # 2:	
(Sig	gnature) (Date)
(Pri	nt Name)

Inventor:		
	(Signature)	(Date)
Michael Mantor (Print Name	)	
Chata of	,	
State of		
On be (insert date)	efore me,	
(insert name	e and title of the notarizing officer)	
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Witness # 1:

	(Signature)	(Date)
	(Print Name)	
Witness # 2:		
	(Signature)	(Date)
	(Print Name)	
Inventor:		
	_ (Signature)	(Date)
Thomas Roy Woller (Print Na	ame)	
State of	)	
County of	)	
On be (insert date)	efore me,	
unsen dater		

personally appeared <u>Thomas Roy Woller</u>, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the

(insert name and title of the notarizing officer)

			erson(s), or trument.	the enti	ty upon	behalf	of wh	ich the	e per	son(s)	acted,
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In	ventor:										
_					Signatur	e)				(Date)	
	Ke	vin Mc	<u> Grath</u> (Print I	Name)							

State of	)	
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On(insert date)	before me,	
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WITNESS my hand and offic	ial seal.	
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Witness # 1:		
	(Signature)	(Date)
	(Print Name)	
Witness # 2:		
	(Signature)	(Date)
	(Print Name)	DATENT

Inventor:		
	(Signature)	(Date)
Sebastien Nussbau	<u>um</u> (Print <b>N</b> ame)	
	,	
State of		
On(insert date)	before me,	
(in	sert name and title of the notarizir	ng officer)
satisfactory evidence to l within instrument and acl his/her/their authorized c	bastien Nussbaum, who proved be the person(s) whose name(s) knowledged to me that he/she/th apacity(ies), and that by his/her , or the entity upon behalf of wh	is/are subscribed to the ey executed the same in /their signature(s) on the
•	TY OF PERJURY under the that the foregoing paragra	
WITNESS my hand and o	official seal.	
(NOTARY SEAL)	Signature:	

On(insert date)	before me,	
County of		
State of		
<u>Nuwan S. Jayasena</u>	(Print Name)	
N 0 :	(Signature)	(Date)
Inventor:		
	(Print Name)	
	(Signature)	(Date)
Witness # 2:		
	(Print Name)	
	(Signature)	(Date)

(insert name and title of the notarizing officer)

personally appeared <u>Nuwan S. Jayasena</u>, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the

within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY	OF PERJURY under the laws of the State that the foregoing paragraph is true and correct.	of
WITNESS my hand and offic	al seal.	
(NOTARY SEAL)	Signature:	-
Witness # 1:		
	(Signature)(Date	<b>)</b>
Witness # 2:		
	(Signature)(Date	∌)
Inventor:		
Rex McCrary (Print Na	(Signature)(Date)	

State of	)	
County of	)	
On(insert date)	before me,	
(insert	name and title of the notarizing	officer)
evidence to be the person instrument and acknowledg his/her/their authorized capa	Crary, who proved to me on to the control of the co	bscribed to the within executed the same in neir signature(s) on the
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WITNESS my hand and offici	al seal.	
(NOTARY SEAL)	Signature:	
Witness # 1:		
	(Signature)	(Date)
	(Print Name)	
Witness # 2:		
	(Signature)	(Date)

REEL: 027987 FRAME: 0818

	(Print Nai	me)	
Inventor:			
	(Signature)		(Date)
Philip J. Rogers (Print Name	e)		
State of	)		
County of			
On b (insert date)	pefore me,		
(insert name personally appeared Philip J. Rogerous evidence to be the person(s) with instrument and acknowledged the his/her/their authorized capacity(instrument the person(s), or the executed the instrument.	whose name(s) is to me that he/sho es), and that by h	me on the basis dare subscribed e/they executed his/her/their signa	to the within the same in ture(s) on the
I certify under PENALTY OF	PERJURY unde		
WITNESS my hand and official sea	5 5.		
(NOTARY SEAL)	Signature:		

On be	efore me,	
County of		
State of	)	
Mark Leather (Print Name)		
	(Signature)	(Date)
Inventor:		
	(Print Name)	
	(Signature)	(Date)
Witness # 2:		
	(Print Name)	
	(Signature)	(Date)

(insert name and title of the notarizing officer)

personally appeared <u>Mark Leather</u>, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENAL	.TY OF PERJURY under the laws of that the foregoing paragraph is true	the State of and correct.
WITNESS my hand and o	official seal.	
(NOTARY SEAL)	Signature:	
Witness # 1:		
	(Signature)(Print Name)	(Date)
Witness # 2:		
	(Signature)	(Date)
	(Print Name)	

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AMD Reference No. 100637

## **ASSIGNMENT OF PATENT RIGHTS**

This is an assignment of patent rights between inventor(s) (1.) Scott Hartog, (2.) Ralph Clay Taylor, (3.) Michael Mantor, (4.) Thomas Roy Woller, (5.) Kevin McGrath, (6.) Sebastien Nussbaum, (7.) Nuwan S. Jayasena, (8.) Rex McCrary, (9.) Philip J. Rogers, and (10.) Mark Leather (hereinafter referred to as the "Inventor(s)") and Advanced Micro Devices, Inc., having a place of business at One AMD Place, Sunnyvale, California, USA (hereinafter referred to as the "Assignee").

WHEREAS, Inventor(s) are named as inventors in the patent application filed in the USA on December 14, 2011, entitled Software Mechanisms For Managing Task Scheduling On An Accelerated Processing Device (APD), having application no. 13/325,755, and having a docket number of 1972.2320000 (hereinafter referred to as the "Application"); and

WHEREAS, Assignee has a desire to acquire all rights, title, and interest in the invention(s) disclosed in the Application (hereinafter referred to as the "Invention(s)"), including any rights, title, and interest in the Invention(s) not previously transferred to Assignee through prior agreement.

NOW, THEREFORE, the parties agree as follows:

- 1. To the extent that Inventor(s) are subject to a prior agreement transferring rights, title, and/or interest in the Invention(s) to the Assignee, Inventor(s) hereby confirm such transfer.
- 2. To the extent that Inventor(s) retain any rights, title, or interest in the Invention(s) not vested in the Assignee on the date(s) of execution of this Assignment, Inventor(s) hereby assign and otherwise transfer to the Assignee their entire right, title, and interest, throughout the world, in and to: the Invention(s), including any patent applications, patents, invention registrations, and equivalents thereof (including any and all provisional, international, regional, and national patents and patent applications, and all divisions, continuations, continuations-in-part, renewals, reissues, reexams, substitutes and extensions thereof), for the Invention(s) and all rights to claim priority thereto. Inventor(s) further assign and

AMD Reference No. 100637

otherwise transfer to Assignee all causes of action and remedies arising under any

patent or patent application for the Invention(s) prior to, on, or after the date(s) of

execution of this Assignment. Inventor(s) shall not be entitled to an accounting for

any causes of action or remedies pursued by Assignee.

3. The transfers set forth in Paragraphs 1 and 2 above are in

consideration for the sum of at least one U.S. dollar (US\$1) (or its equivalent) and/or

other consideration for which both parties acknowledge to be valuable. Such

consideration includes but is not limited to at least one of the following: employment,

an independent contractor agreement, monetary payment, or other benefit hereby

acknowledged as received.

4. Inventor(s) hereby authorize and request the Commissioner of Patents

and Trademarks, or equivalent thereof, to issue the patent for the Invention, and all

resulting patents therefrom, insofar as the Inventor(s)' interest is concerned, to the

Assignee.

5. Inventor(s) further agree to execute any and all powers of attorney,

applications, assignments, declarations, affidavits, and any other papers in

connection therewith necessary to perfect Assignee's rights, title, and interest in the

Invention(s).

6. Inventor(s) hereby authorize Assignee, its successors and assigns, its

legal representatives, or anyone the Assignee may properly designate, to insert in

this Assignment of Patent Rights the filing date and/or application number of the

Application when ascertained.

7. Inventor(s) hereby further agree to, with respect to any patent

application or patent for the Invention(s), at the expense of the Assignee:

i) testify in any legal proceedings,

ii) sign all lawful papers,

iii) execute all divisional, continuation, continuation-in-part, reissue,

reexamination, and substitute applications,

PATENT

**REEL: 027987 FRAME: 0823** 

- iv) make all lawful oaths, and assist in vesting title in the Assignee and to aid the Assignee to obtain and enforce proper protection for the subject matter of the Invention(s) in all countries and regions, and
- v) notify Assignee promptly (by facsimile or first class mail) of any subpoena or contact by any person other than Assignee or its agents regarding the Invention or resultant patent(s) issuing therefrom, and in any event at least one week prior to any deposition, legal inquiry or legal proceeding relating to the above identified invention.

	This	assignm	nent is	s executed	on	the	date(s)	of	which	the	Inventor(s)	have
signed	l.											
Invent	or:											
					(Sig	jnatu	ıre)				(Date)	
	Scott	<u>Hartog</u>	(Print	Name)								
State o	of						)					
							)					
000	,											
On				bef	ore i	me,						
		(insert d	ate)									

(insert name and title of the notarizing officer)

personally appeared <u>Scott Hartog</u>, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALT	TY OF PERJURY under the law that the foregoing paragraph in the foregoing p	ws of the State of s true and correct.
WITNESS my hand and of	ficial seal.	
(NOTARY SEAL)	Signature:	
Witness # 1:		
	(Signature) (Print Name)	(Date)
Witness # 2:		
	(Signature) (Print Name)	(Date)
Inventor:		
Ralph Clay Taylor (	(Signature) Print Name)	(Date)
State of	)	

County of	)
On(insert date)	before me,
(insert	name and title of the notarizing officer)
satisfactory evidence to be the within instrument and acknow his/her/their authorized capacity	Clay Taylor, who proved to me on the basis of ne person(s) whose name(s) is/are subscribed to the dedged to me that he/she/they executed the same in city(ies), and that by his/her/their signature(s) on the the entity upon behalf of which the person(s) acted,
I certify under PENALTY	OF PERJURY under the laws of the State of that the foregoing paragraph is true and correct.
WITNESS my hand and officia	al seal.
(NOTARY SEAL)	Signature:
Witness # 1:	
	(Signature)(Date)
	(Print Name)
Witness # 2:	
	(Signature)(Date)
	(Print Name)

Inventor:	
	_(Signature)(Date)
Michael Mantor (Print Name)	
State of	
On bef	
personally appeared Michael Manto evidence to be the person(s) whinstrument and acknowledged to his/her/their authorized capacity(ies	and title of the notarizing officer)  or, who proved to me on the basis of satisfactory nose name(s) is/are subscribed to the within me that he/she/they executed the same in s), and that by his/her/their signature(s) on the ntity upon behalf of which the person(s) acted
	PERJURY under the laws of the State of the foregoing paragraph is true and correct.
WITNESS my hand and official seal	-
(NOTARY SEAL) Si	gnature:
Witness # 1:	

		(Date)
<u> </u>	(Print Name)	
Witness # 2:		
	(Signature)	(Date)
*****	(Print Name)	
Inventor:		
	(Signature)	(Date)
Thomas Roy Woller (I	Print Name)	
State of	)	
County of	)	
On(insert date)	before me,	

personally appeared <u>Thomas Roy Woller</u>, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the

(insert name and title of the notarizing officer)

			erson(s), or trument.	the en	tity upon	behalf	of wh	ich th	e pe	erson	(s) ac	ted,
I 	certify	under	PENALTY	OF P	ERJURY	under joing pa	the ragrap	laws oh is tr	of ue a	the nd co	State orrect.	of
W	/ITNES	S my ha	and and offici	al seal.								
1)	NOTARY	Y SEAL	)	Sig	gnature: _		·					
	Wi	itness #	1:									
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	Wi	itness #	· <b>2</b> :									
					(S	ignature	<del>;</del> )				(Da	ite)
	_				(P	rint Nan	ne)					
lr	nventor:											
_					(Signatu	œ)				_ (Da	te)	
	<u>Ke</u>	evin Mc	<u>Grath</u> (Print I	Name)								

State of	)	
County of	)	
Ont (insert date)	pefore me,	
(insert nam	ne and title of the notarizing office	r)
personally appeared Kevin McGraevidence to be the person(s) instrument and acknowledged his/her/their authorized capacity(instrument the person(s), or the executed the instrument.	whose name(s) is/are subscrib to me that he/she/they execut ies), and that by his/her/their sign	ed to the within ed the same in gnature(s) on the
I certify under PENALTY OF		
WITNESS my hand and official se	eal. Signature:	
Witness # 1:		
	(Signature)	(Date)
	(Print Name)	
Witness # 2:		
	(Signature)	(Date)
	(Print Name)	

Inventor:		
	(Signature)	(Date)
Sebastien Nussbau	m (Print Name)	
Otata	,	
State of	<i>)</i>	
County of	)	
On(insert date)	before me,	
(insert date)		
line	sert name and title of the notariz	ing officer)
•		-
satisfactory evidence to be within instrument and ack his/her/their authorized ca	pastien Nussbaum, who prover be the person(s) whose name(s knowledged to me that he/she/t apacity(ies), and that by his/he or the entity upon behalf of w	<ul> <li>is/are subscribed to the hey executed the same in r/their signature(s) on the</li> </ul>
I certify under PENAL	TY OF PERJURY under the that the foregoing paragr	e laws of the State o aph is true and correct.
WITNESS my hand and or	fficial seal.	
(NOTARY SEAL)	Signature:	

On(insert date)	_ ,	
On	before me,	
County of	)	
State of	)	
Nuwan S. Jayasena (Pri	nt Name)	
	(Signature)	(Date)
Inventor:		
	(Print Name)	
		(Date)
Williams II Z.		
Witness # 2:		
	(Print Name)	
	(Signature)	(Date)

personally appeared <u>Nuwan S. Jayasena</u>, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the

within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

l ce	rtify	under	PENALTY	OF PERJURY under the laws of the State that the foregoing paragraph is true and correct.	of
WITI	NESS	S my ha	nd and offici	cial seal.	
(NO <sup>-</sup>	ΓAR\	/ SEAL)	)	Signature:	-
	Wi	tness #	1:		
				(Signature)(Date	∌)
	Wi	tness #	2:		
				(Signature)(Date	∌)
Inve	ntor:				
<i>(</i> )			ang (Print Na	(Signature) <u>3-27-2212</u> (Date)	

State of Floxida )
County of <u>Ovange</u> )
on 3/27/2012 before me, (insert date)  Jennie Leanna Wilson Recaptionist 1
(insert name and title of the notarizing officer)
personally appeared Rex McCrary, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.
certify under PENALTY OF PERJURY under the laws of the State of Logical Contract that the foregoing paragraph is true and correct.
WITNESS my hand and official seal.
JENNIE LEANNA WILSON MY COMMISSION # DD993794 EXPIRES May 20, 2014 Signature:
Witness # 1:
(Signature)(Date)
(Print Name)
Witness # 2:
(Signature)(Date)

	(Print Nan	ne)	
Inventor:			
	(0:		(Data)
Di Walin I. Danier (Deint Nam	(Signature)		(Date)
<u>Philip J. Rogers</u> (Print Nan	ne)		
State of	)		
County of			
0-	hoforo mo		
On(insert date)	before me,		
•	me and title of the no		en de la companya de
personally appeared Philip J. Roevidence to be the person(s) instrument and acknowledged his/her/their authorized capacity instrument the person(s), or the executed the instrument.	whose name(s) is, to me that he/she (ies), and that by h	/are subscribed e/they executed is/her/their signa	to the within the same in ature(s) on the
I certify under PENALTY OF			
WITNESS my hand and official se		-	
(NOTARY SEAL)	Signature:		

Witness # 1:		
	(Signature)	(Date)
	(Print Name)	
Witness # 2:		
	(Signature)	(Date
	(Print Name)	
nventor:		
	(Signature)	(Date)
Mark Leather (Print Name)		
State of	)	
County of	)	
On be	efore me,	
(insert name	e and title of the notarizing of	ficer)

personally appeared <u>Mark Leather</u>, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENAL	TY OF PERJURY under the laws of the Standard that the foregoing paragraph is true and correct that the foregoing paragraph is true and the foregoing paragraph.	ate of ect.
WITNESS my hand and o	ficial seal.	
(NOTARY SEAL)	Signature:	
Witness # 1:		
	(Signature)(Print Name)	(Date)
Witness # 2:		
	(Signature)(Print Name)	(Date)

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