### PATENT ASSIGNMENT

## Electronic Version v1.1

Stylesheet Version v1.1

SUBMISSION TYPE:	NEW ASSIGNMENT		
NATURE OF CONVEYANCE:	ASSIGNMENT		
CONVEYING PARTY DATA			
	Execution Date		
Gopichandra Surnilla		11/29/2012	
Richard E. Soltis	10/29/2012		
Jacobus Hendrik Visser	12/14/2012		
Timothy Joseph Clark		12/04/2012	
David James Scholl		10/25/2012	
RECEIVING PARTY DATA			
Name: Ford Global T	Ford Global Technologies, LLC		
Street Address: Fairlane Plaza	Fairlane Plaza South, Suite 800		
Internal Address: 330 Town Ce	nter Drive		
City: Dearborn	Dearborn		
State/Country: MICHIGAN	MICHIGAN		
Postal Code: 48126			
PROPERTY NUMBERS Total: 1 Property Type	Number		
Application Number:	13706074		
CORRESPONDENCE DATA			
Phone:503-459Email:cohen@Correspondent Name:ALLEMAAddress Line 1:806 S.W	Mail when the fax attempt is unsuccessful.		
ATTORNEY DOCKET NUMBER:	83256634		
NAME OF SUBMITTER:	Liana Cohen	Liana Cohen	
	]	PATENT	

Total Attachments: 5 source=Executed Assignment 83256634#page1.tif source=Executed Assignment 83256634#page2.tif source=Executed Assignment 83256634#page3.tif source=Executed Assignment 83256634#page4.tif source=Executed Assignment 83256634#page5.tif

### ASSIGNMENT AND DECLARATION (37 C.F.R. 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 C.F.R. 1.76)

Title of Inventi	ion	METHODS AND SYSTEMS FOR A GAS CONSTITUENT SENSOR	
This declaration i	is direct	ed to:	
	The attached application, or United States application or PCT international application number filed on		
The above-identi	fied app	plication was made or authorized to be made by me.	
l hereby state th including the clai		ve reviewed and understand the contents of the specification in the above-identified application,	
I believe that I an	I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.		
continuation-in-p	art app	o disclose information which is material to patentability as defined in 37 C.F.R. 1.56, including for plications, material information which became available between the filing date of the prior and or PCT international filing date of the continuation-in-part application.	
FORD GLOBAL of the State of D hereinafter referr interest, domestic of the ASSIGNE for the inventions name or names, of insert the serial/ <u>13/706,074</u> <u>ASSIGNEE</u> , its applications, in a	TECH Delawar ed to a c and fc E, its s s and d or in m applica succes nd to th plicatio	ment agreement heretofore made or by contractual obligation, I do sell, assign and set over unto NOLOGIES, LLC, a Ford Motor Company subsidiary, organized and existing by virtue of the laws e, having its principal place of business at Dearborn, County of Wayne, and State of Michigan, is the ASSIGNEE, its successors, assigns or other legal representatives, the entire right, title and breign, in and to the inventions and discoveries in the above-identified invention including the right uccessors, assigns or other legal representatives to make applications and to receive Letters Patent iscoveries in any and all countries, entities and intergovernmental organizations, in its or their own y name, at its or their election (and I hereby authorize the ASSIGNEE or ASSIGNEE's attorney to thom number and filing date of the application to receive Letters Patent herein: Serial No	
And I hereby agree for myself, my heirs, successors, assigns or other legal representatives to execute any and all papers, including applications for Letters Patent of any and all kinds and in any and all countries, entities and intergovernmental organizations, and to perform any and all acts which the ASSIGNEE, its successors, assigns or other legal representatives may deem necessary to secure thereto the rights herein sold, assigned and set over.			
And I hereby rep	And I hereby represent and warrant that I have not granted any rights inconsistent with the rights granted herein.		
I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years or both.			
LEGAL NAME ( Inventor: G		TENTOR adra Surnilla Date: // 29 / 7	
Signature:	L.S.	ima warming the state of the st	
		a Sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form, on form for each additional inventor.	

# ASSIGNMENT AND DECLARATION (37 C.F.R. 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 C.F.R. 1.76)

Title of Invention	METHODS AND SYSTEMS FOR A GAS CONSTITUENT SENSOR	
This declaration is a	lirected to:	
	The attached application, or United States application or PCT international application number filed on	
The above-identifie	d application was made or authorized to be made by me.	
I hereby state that including the claims	I have reviewed and understand the contents of the specification in the above-identified application,	
I believe that I am t	he original inventor or an original joint inventor of a claimed invention in the application.	
continuation-in-part	uty to disclose information which is material to patentability as defined in 37 C.F.R. 1.56, including for applications, material information which became available between the filing date of the prior national or PCT international filing date of the continuation-in-part application.	
rokb GLOBAL 1 of the State of Deli hereinafter referred interest, domestic an of the ASSIGNEE, for the inventions an name or names, or i insert the serial/ap 13/706,074 ASSIGNEE, its su applications, in and including all applic	ployment agreement heretofore made or by contractual obligation, I do sell, assign and set over unto ECHNOLOGIES, LLC, a Ford Motor Company subsidiary, organized and existing by virtue of the laws aware, having its principal place of business at Dearborn, County of Wayne, and State of Michigan, to as the ASSIGNEE, its successors, assigns or other legal representatives, the entire right, title and hd foreign, in and to the inventions and discoveries in the above-identified invention including the right its successors, assigns or other legal representatives to make applications and to receive Letters Patent and discoveries in any and all countries, entities and intergovernmental organizations, in its or their own n my name, at its or their election (and I hereby authorize the ASSIGNEE or ASSIGNEE's attorney to plication number and filing date of the application to receive Letters Patent herein: Serial No, Filing Date	
organizations, and to	for myself, my heirs, successors, assigns or other legal representatives to execute any and all papers, ns for Letters Patent of any and all kinds and in any and all countries, entities and intergovernmental o perform any and all acts which the ASSIGNEE, its successors, assigns or other legal representatives to secure thereto the rights herein sold, assigned and set over.	
And I hereby repress	ent and warrant that I have not granted any rights inconsistent with the rights granted herein.	
or imprisonment of i	ge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine not more than five (5) years or both.	
LEGAL NAME OF		
Inventor: <u>Rich</u>	ard E. Soltis Date: 29/28/2012	
Signature:	Uchard & Solto	
Note: An Application	Data Sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form, aration form for each additional inventor.	

### ASSIGNMENT AND DECLARATION (37 C.F.R. 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 C.F.R. 1.76)

Title of Inventio	on METHODS AND SYSTEMS FOR A GAS CONSTITUENT SENSOR	
This declaration is	s directed to:	
	The attached application, or United States application or PCT international application number filed on	
The above-identifi	fied application was made or authorized to be made by me.	
I hereby state that I have reviewed and understand the contents of the specification in the above-identified application including the claims.		
I believe that I am	I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.	
continuation-in-pa	e duty to disclose information which is material to patentability as defined in 37 C.F.R. 1.56, including for art applications, material information which became available between the filing date of the prior are national or PCT international filing date of the continuation-in-part application.	
FORD GLOBAL of the State of De hereinafter referre interest, domestic of the ASSIGNEE for the inventions name or names, or insert the serial/a 13/706,074 ASSIGNEE, its s applications, in an including all app.	mployment agreement heretofore made or by contractual obligation, I do sell, assign and set over unta TECHNOLOGIES, LLC, a Ford Motor Company subsidiary, organized and existing by virtue of the law belaware, having its principal place of business at Dearborn, County of Wayne, and State of Michigar ed to as the ASSIGNEE, its successors, assigns or other legal representatives, the entire right, title and and foreign, in and to the inventions and discoveries in the above-identified invention including the right e, its successors, assigns or other legal representatives to make applications and to receive Letters Paten and discoveries in any and all countries, entities and intergovernmental organizations, in its or their own or in my name, at its or their election (and I hereby authorize the ASSIGNEE or ASSIGNEE's attorney to application number and filing date of the application to receive Letters Patent herein: Serial No prince of the series of the application to receive Letters and set over to the successors, assigns or other legal representatives, all rights of priority, including any provisionand to the inventions and discoveries in any and all countries, entities and intergovernmental organizations, and to the inventions and discoveries in any and all countries, entities and intergovernmental organizations oblications claiming benefit of the filing date hereof, continuations, continuations-in-part, divisionals and reissue applications.	
And I hereby agree for myself, my heirs, successors, assigns or other legal representatives to execute any and all papers, including applications for Letters Patent of any and all kinds and in any and all countries, entities and intergovernmental organizations, and to perform any and all acts which the ASSIGNEE, its successors, assigns or other legal representatives may deem necessary to secure thereto the rights herein sold, assigned and set over.		
And I hereby represent and warrant that I have not granted any rights inconsistent with the rights granted herein.		
I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years or both.		
LEGAL NAME OF INVENTOR Inventor: Jaco Hendrik Visser Date: 12/14/2012 Jacobus Jacobus		
Note: An Applicati Use an additional de	Note: An Application Data Sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form Use an additional declaration form for each additional inventor.	

### ASSIGNMENT AND DECLARATION (37 C.F.R. 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 C.F.R. 1.76)

Title of Invention	METHODS AND SYSTEMS FOR A GAS CONSTITUENT SENSOR		
This declaration is	directed to:		
	The attached application, or United States application or PCT international application number filed on		
The above-identif	ed application was made or authorized to be made by me.		
I hereby state tha including the clair	t I have reviewed and understand the contents of the specification in the above-identified application, as.		
I believe that I am	the original inventor or an original joint inventor of a claimed invention in the application.		
continuation-in-pa	duty to disclose information which is material to patentability as defined in 37 C.F.R. 1.56, including for rt applications, material information which became available between the filing date of the prior e national or PCT international filing date of the continuation-in-part application.		
FORD GLOBAL of the State of De hereinafter referre interest, domestic of the ASSIGNEE for the inventions name or names, or insert the serial/a <u>13/706.074</u> ASSIGNEE, its of applications, in an including all app	nployment agreement heretofore made or by contractual obligation, 1 do sell, assign and set over unto TECHNOLOGIES, LLC, a Ford Motor Company subsidiary, organized and existing by virtue of the laws elaware, having its principal place of business at Dearborn, County of Wayne, and State of Michigan, d to as the ASSIGNEE, its successors, assigns or other legal representatives, the entire right, title and and foreign, in and to the inventions and discoveries in the above-identified invention including the right discoveries in any and all countries, entities and intergovernmental organizations, in its or their own in my name, at its or their election (and I hereby authorize the ASSIGNEE or ASSIGNEE's attorney to pplication number and filing date of the application to receive Letters Patent herein: Serial No, Filing Date, 2012), and I hereby sell, assign and set over to the successors, assigns or other legal representatives, all rights of priority, including any provisional d to the inventions and all countries, entities and intergovernmental organizations, in jup rovisional d to the inventions and discoveries in any and all countries, entities and intergovernmental organizations, for the successors, assigns or other legal representatives, all rights of priority, including any provisional d to the inventions and discoveries in any and all countries, entities and intergovernmental organizations, in cluding any provisional d to the inventions and discoveries in any and all countries, entities and intergovernmental organizations, including any provisionals, in each set over to the filing date hereof, continuations, continuations-in-part, divisionals, d reissue applications.		
And I hereby agree for myself, my heirs, successors, assigns or other legal representatives to execute any and all papers, including applications for Letters Patent of any and all kinds and in any and all countries, entities and intergovernmental organizations, and to perform any and all acts which the ASSIGNEE, its successors, assigns or other legal representatives may deem necessary to secure thereto the rights herein sold, assigned and set over.			
And I hereby repre	sent and warrant that I have not granted any rights inconsistent with the rights granted herein.		
or imprisonment o	dge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine f not more than five (5) years or both.		
LEGAL NAME O Inventor: <u>Tin</u>	rothy Joseph Clark Date: 12/4/2012		
Signature:	nngo/ (10th		
Note: An Application	on Data Sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form.		
Use an additional de	claration form for each additional inventor.		

### ASSIGNMENT AND DECLARATION (37 C.F.R. 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 C.F.R. 1.76)

Title of Invention	METHODS AND SYSTEMS FOR A GAS CONSTITUENT SENSOR		
This declaration is d	irected to:		
	The attached application, or           United States application or PCT international application number		
The above-identified	application was made or authorized to be made by me.		
1 hereby state that 1 including the claims	have reviewed and understand the contents of the specification in the above-identified application,		
I believe that I am th	I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.		
continuation-in-part	ity to disclose information which is material to patentability as defined in 37 C.F.R. 1.56, including for applications, material information which became available between the filing date of the prior lational or PCT international filing date of the continuation-in-part application.		
FORD GLOBAL TI of the State of Dela hereinafter referred interest, domestic an of the ASSIGNEE, for the inventions ar name or names, or in insert the serial/app <u>13/706,074</u> ASSIGNEE, its su applications, in and	doyment agreement heretofore made or by contractual obligation, I do sell, assign and set over unto SCHNOLOGIES, LLC, a Ford Motor Company subsidiary, organized and existing by virtue of the laws oware, having its principal place of business at Dearborn, County of Wayne, and State of Michigan, to as the ASSIGNEE, its successors, assigns or other legal representatives, the entire right, title and d foreign, in and to the inventions and discoveries in the above-identified invention including the right its successors, assigns or other legal representatives to make applications and to receive Letters Patent and discoveries in any and all countries, entities and intergovernmental organizations, in its or their own n my name, at its or their election (and I hereby authorize the ASSIGNEE or ASSIGNEE's attorney to blication number and filing date of the application to receive Letters Patent herein: Serial No		
And I hereby agree for myself, my heirs, successors, assigns or other legal representatives to execute any and all papers, including applications for Letters Patent of any and all kinds and in any and all countries, entities and intergovernmental organizations, and to perform any and all acts which the ASSIGNEE, its successors, assigns or other legal representatives may deem necessary to secure thereto the rights herein sold, assigned and set over.			
And I hereby represent and warrant that I have not granted any rights inconsistent with the rights granted herein.			
I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years or both.			
LEGAL NAME OF Inventor: Davi	INVENTOR d James Scholl Date: 10/25/2012		
	and James Solid		
	Data Sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form.		
	aration form for each additional inventor.		

#### PATENT REEL: 029707 FRAME: 0373

#### **RECORDED: 01/28/2013**