### PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT5449428

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

#### **CONVEYING PARTY DATA**

Name	Execution Date
PAUL WILLEMS	03/29/2019
CHRISTINA TEFLIOUDI	03/29/2019
TILL MERKER	03/29/2019

#### **RECEIVING PARTY DATA**

Name:	SAP SE
Street Address:	DIETMAR-HOPP-ALLEE 16
City:	WALLDORF
State/Country:	GERMANY
Postal Code:	69190

#### **PROPERTY NUMBERS Total: 1**

Property Type	Number
Application Number:	16370556

#### CORRESPONDENCE DATA

Fax Number: (617)542-2241

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

using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.

Phone: 6175426000

Email: IPDocketingBOS@mintz.com

**Correspondent Name:** MINTZ LEVIN

Address Line 1: ONE FINANCIAL CENTER

Address Line 4: BOSTON, MASSACHUSETTS 02111

ATTORNEY DOCKET NUMBER:	054874-466F01US	
NAME OF SUBMITTER:	ERIN P. WEINLICK	
SIGNATURE:	/Erin Weinlick/	
DATE SIGNED:	03/29/2019	

**Total Attachments: 3** 

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> **PATENT REEL: 048745 FRAME: 0978** 505402634

Attorney Dkt. No. 054874-466F01US/ 190214US01

### ASSIGNMENT

For valuable consideration, I, Paul Willems,

hereby assign to

# SAPSE, a corporation of Europe having a place of business at Dietmar-Hopp-Allee 16, 69190 Walldorf, Germany

and its successors, and assigns (collectively, the ASSIGNEE) my entire right, title and interest throughout the world in the inventions and improvements in a patent document entitled:

#### QUERY PLAN GENERATION AND EXECUTION BASED ON SINGLE VALUE COLUMNS

which is found in the:

USpatent application filed on: March 29, 2019

under Application No. 16/370,556

I authorize and request the attorneys of record or the attorney filing the application to insert into this assignment the filing date and serial number of the application when known. This assignment includes the foregoing patent application or patent, as well as continuations and divisionals of said application, all legal equivalents in any country, and all patents issuing from such legal equivalents; all patents, utility models, and design registrations granted by any jurisdiction for any of said inventions and improvements; and the right to claim priority based on the filing date of the foregoing patent application or patent under the International Convention for the Protection of Industrial Property, the Patent Cooperation Treaty, the European Patent Convention, and all other treaties of like purposes. I authorize the Assignee to apply in all countries in my name or in its own name for patents, utility models, and design registrations and like rights of exclusion and for inventors' certificates for said inventions and improvements. Thereby covenant that no assignment, sale, agreement or encumbrance has been or will be made or entered into that would conflict with this assignment. I hereby state and agree that no assignment, sale, agreement, or encumbrance has been or will be made or entered into that would conflict with this assignment. I further agree for myself and my heirs, legal representatives, and assigns to provide to the Assignee promptly upon its request and at its expense all pertinent facts and documents relating to any of said inventions and improvements or said patents and legal equivalents as may be known and accessible to me and to testify as to the same in any interference, litigation, or proceeding relating thereto; and I agree promptly to perform such lawful acts and to sign such further applications, assignments, statements, and other lawful documents as the Assignee may reasonably request to effectuate fully this assignment.

Inventor's Signature:

| Paul Willems | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/

PATENT REEL: 048745 FRAME: 0979 Attorney Dkt. No. 054874-466F01US/ 190214US01

### ASSIGNMENT

For valuable consideration, I, Christina Teflioudi,

hereby assign to

SAPSE, a corporation of Europe having a place of business at Dietmar-Hopp-Allee 16, 69190 Walldorf, Germany

and its successors, and assigns (collectively, the ASSIGNEE) my entire right, title and interest throughout the world in the inventions and improvements in a patent document entitled:

#### QUERY PLAN GENERATION AND EXECUTION BASED ON SINGLE VALUE COLUMNS

which is found in the:

USpatent application filed on: March 29, 2019

under Application No. 16/370,556

I authorize and request the attorneys of record or the attorney filing the application to insert into this assignment the filing date and serial number of the application when known. This assignment includes the foregoing patent application or patent, as well as continuations and divisionals of said application, all legal equivalents in any country, and all patents issuing from such legal equivalents; all patents, utility models, and design registrations granted by any jurisdiction for any of said inventions and improvements; and the right to claim priority based on the filing date of the foregoing patent application or patent under the International Convention for the Protection of Industrial Property, the Patent Cooperation Treaty, the European Patent Convention, and all other treaties of like purposes. I authorize the Assignee to apply in all countries in my name or in its own name for patents, utility models, and design registrations and like rights of exclusion and for inventors' certificates for said inventions and improvements. Thereby covenant that no assignment, sale, agreement or encumbrance has been or will be made or entered into that would conflict with this assignment. I hereby state and agree that no assignment, sale, agreement, or encumbrance has been or will be made or entered into that would conflict with this assignment. I further agree for myself and my heirs, legal representatives, and assigns to provide to the Assignee promptly upon its request and at its expense all pertinent facts and documents relating to any of said inventions and improvements or said patents and legal equivalents as may be known and accessible to me and to testify as to the same in any interference, litigation, or proceeding relating thereto; and I agree promptly to perform such lawful acts and to sign such further applications, assignments, statements, and other lawful documents as the Assignee may reasonably request to effectuate fully this assignment.

Inventor's Signature: (Livistina tifuoudi 3/29/2019

Christina Tetiloudi 3/29/2019

PATENT REEL: 048745 FRAME: 0980 Attorney Dkt. No. 054874-466F01US/ 190214US01

### ASSIGNMENT

For valuable consideration, I, Till Merker,

hereby assign to

# SAPSE, a corporation of Europe having a place of business at Dietmar-Hopp-Allee 16, 69190 Walldorf, Germany

and its successors, and assigns (collectively, the ASSIGNEE) my entire right, title and interest throughout the world in the inventions and improvements in a patent document entitled:

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Inventor's Signature:

| Till Merker | 3/29/2019 | Till Merker | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3/29/2019 | 3

PATENT REEL: 048745 FRAME: 0981

RECORDED: 03/29/2019