506259517 09/18/2020

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT6306263

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
UNIVERSITY OF OXFORD	11/18/2013

RECEIVING PARTY DATA

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PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	17025192

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DATE SIGNED:	09/18/2020

Total Attachments: 2

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PATENT 506259517 REEL: 053817 FRAME: 0121

ASSIGNMENT OF INTELLECTUAL PROPERTY Isis Project Number: 10589

Entitled: Parallel Materialisation of Datalog Programs in Main-Memory RDF Databases

THIS AGREEMENT dated 1 H NOV 2013 is made

BETWEEN:

- (1) THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF OXFORD, whose administrative offices are at University Offices, Wellington Square, Oxford OX1 2JD, England (the "University"); and
- (2) ISIS INNOVATION LIMITED, a company registered in England and Wales (No.02199542) whose registered office is at University Offices, Wellington Square, Oxford OX1 2JD, England ("Isis").

AGREEMENT:

- 1. In consideration of the sum of £1 now paid by Isis to the University (the receipt of which the University acknowledges), the University assigns to Isis all its right, title and interest in and to:
 - 1.1 the invention, the software and the related libraries and databases which are set out in the Schedule below, together with all patent rights, copyright, design right and all other intellectual and industrial property rights in the same to which the University is now entitled under the laws in force in any part of the world, whether vested, future, contingent and including, but not limited to, any extensions, renewals and reversions (the "Subject Technology");
 - 1.2 such rights as the University may have to sue for and obtain injunctive relief, damages and other relief in respect of any infringement or misuse of the Subject Technology including any accrued rights of action; and
 - 1.3 the right to apply for patent or other similar protection in any territory or group of territories in respect of the Subject Technology, and the right to claim priority under the International Convention for the Protection of Industrial Property and under any other relevant international convention or treaty for each country of the union constituted by the relevant convention in which application may be made by Isis.
- 2. Isis hereby grants an irrevocable right in perpetuity for (i) the University and those persons who at any time work or have worked on the Subject Technology to use the Subject Technology for Academic and Research Purposes; and (ii) for those persons who at any time work or have worked on the Subject Technology to use the same for the purpose of Clinical Patient Care. The right granted at (i) includes the right for the University to license the Subject Technology to any of its collaborators in connection with and solely for the purposes of the University's Academic and Research Purposes; but it does not include the right to grant any licence to commercially exploit the Subject Technology. For the purposes of this clause, "Academic and Research Purposes" means research, teaching or other scholarly use which is undertaken for the purposes of education and research and "Clinical Patient Care" means diagnosing, treating and/or managing the health of persons under the care of an individual having the right to use the Subject Technology in the event that such Subject Technology is capable of application in a healthcare setting without further development.
- 3. This Agreement is governed by English law, and the English Courts have exclusive jurisdiction to deal with any dispute which may arise out of or in connection with this Agreement.

Schedule (Clause 1.1 – the Subject Technology)

The goal of this invention is to improve the performance of reasoning in main-memory RDF databases, with the particular focus on multi-core systems. The invention consists of two main parts. The first part is a new algorithm that is more amenable to parallelisation. The second part is a new main memory data structure that can be manipulated in a thread-safe way. The invention contains a description of how this data structure can be updated in a `mostly' lock-free fashion (i.e., the majority

PATENT REEL: 058627 FRAME: 0022 of updates can be done without acquiring a lock, which is beneficial when many threads are accessing the data structure).

This assignment includes subsequent versions of the Subject Technology that implement substantially the same functionality, and which incorporate minor improvements and error corrections.

This assignment does not include subsequent versions that incorporate major changes, additional functionality or work performed by researchers not named in the income distribution form (IP/2) completed for this version of the Subject Technology or work funded by internal funding or a third party funder, whose funding did not also support this version of the Subject Technology.

The Subject Technology makes use of the third party (proprietary or open source) software or software libraries listed in Addendum B. Isis will comply with the provisions of the licences of the same and obtain commercial licences if required.

AS WITNESS the hands of the parties or their authorised signatories on the date first mentioned above.

SIGNED for and on behalf of ISIS INNOVATION LIMITED:

Signature:

Name: Mr Evert Geurtsen Position: Deputy Head of Technology

Transfer Isis Innovation SIGNED for and on behalf of

THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF

OXFORD:

Signature:

Name: Position:

[[Redacted]]

PATENT REEL: 0**5**86**27** FRAME: 0**029**