#### INDEPENDENT CONTRACTOR AGREEMENT

This Agreement is dated 19th April 2016 and made between:

- (1) THE TRUSTEES OF THE BRITISH MUSEUM, a charity exempt from registration in England and Wales and a body corporate (by virtue of the British Museum Act 1963 and section 22 of, and paragraph 17 of Schedule 3 to, the Charities Act 2011) of Great Russell Street, London WC1B 3DG (the "Museum"); and
- (2) METAPHACTS GmbH of Daimlerstraße 36, 69190 Walldorf (the "Company").
- (A) The Company is engaged in the field of software development and 'Semantic Web' technologies and has considerable skill, knowledge and experience in that field.
- (B) In reliance upon that skill, knowledge and experience the Museum has decided to engage the Company to provide the Services and the Company agrees to accept the engagement on the terms set out below.
- (C) The Museum has no obligation to provide any work to the Company and the Company has no obligation to accept any work offered by the Museum.

#### **OPERATIVE PROVISIONS**

#### 1 INTERPRETATION

1.1 In this Agreement:

"Affiliates" means any wholly owned affiliates of the Museum;

"directly or indirectly" means (without prejudice to the generality of the expression) whether alone or jointly with or on behalf of any other person, firm, organisation or body corporate and whether on the Company's own account or in partnership with another or others or as the holder of any interest in or as officer, employee or agent of or consultant to any other person, firm, organisation or body corporate;

"Services" means the provision of the independent services to the Museum and/or any Affiliates set out in the Schedule to this Agreement; and

**"Staff"** the employees of the Company engaged in the provision to the Museum of the Services listed in Schedule 3

- 1.2 In this Agreement (unless the context otherwise requires):
  - (A) any reference to any statute or statutory provision shall be construed as including a reference to any modification, re-enactment or extension of such statute or statutory provision for the time being in force or to any subordinate legislation made under the same; and
  - (B) any reference to a clause is to a clause of this Agreement.

#### 2 DURATION

This Agreement will start on 19<sup>th</sup> April 2017 (the "Commencement Date") and will continue, subject to clause 12 below until all the Services are completed within the target date specified in Schedule 2 (the "Term") when it will expire automatically without the need of either party to give notice.

#### 3 SUBSTITUTION AND ASSIGNMENT

No rights under this Agreement may be assigned by the Company save with the prior written consent of the Museum. The Company may use any other person to provide the Services to the Museum in the Company's place or may do so by way of sub-contractor provided always that in either case the Company has the prior written consent of the Museum to do so.

#### 4 OBLIGATIONS OF THE COMPANY

4.1 The Company shall (and will procure that any of its Staff shall) provide the Services as and when reasonably required by the Museum in conformity with the details provided in Schedule 1 and Schedule 2 (or such other additional hours as are necessary for the completion of the Services at no extra charge to the Museum. The Services shall be conducted at the British Museum or at such other location as the Museum shall reasonably require.

## 4.2 The Company shall at all times during the period of this Agreement:

- (A) faithfully and diligently perform those duties and exercise such powers consistent with them which are necessary in connection with the provision of the Services:
- (B) obey all lawful directions given by the Museum to facilitate the performance of the Agreement;
- (C) use all reasonable endeavours to promote the interests of the Museum;
- (D) notify the Museum so far as possible in advance of any periods over which the Company will be unable to provide the Services due to holiday, sickness or (subject to clause 7) third party commitment;
- (E) act in a civil, co-operative and non-discriminatory fashion towards the Museum's employees, visitors, donors, clients, volunteers and other contacts;
- (F) act in a lawful and proper manner with honesty and integrity, including, but not limited to, acting in accordance with the ethical standards governing applicable professions; the Museum's policies and procedures in force from time to time; and
- (G) effect and maintain general third party and (where applicable) product liability, professional indemnity, public liability and employer's liability insurance cover with a combined bodily injury and property damage limit of not less than five million pounds (£5,000,000) per occurrence and series of occurrences arising from one event and (where applicable) unlimited cover in any period of insurance. Such insurance shall contain an indemnity or principles clause. The Company shall provide evidence of such cover to the Museum, if required.

- 4.3 The Company shall promptly upon the request at any time of the Museum and/or immediately upon termination of this Agreement, return all documentation, software and other materials made available to the Company by the Museum or a third party in connection with the Services, and shall not copy, publish or use such documentation, software or other material for any other purpose other than the performance of the Services.
- 4.4 The Company shall provide all equipment necessary for the provision of the Services and shall not bring any equipment onto the Museum's premises without obtaining the Museum's prior approval and any equipment the Company brings onto the Museum's premises shall be at the Company's own risk and shall be maintained in a safe, serviceable and clean condition at all times. The Museum shall have no liability for any loss of or damage to any of the Company's equipment. On completion of the Services the Company shall remove any of the Company's equipment and unused materials and clear away from the Museum's premises all rubbish arising out of the Services, make good any damage caused to the Museum's premises by the removal of equipment and unused materials and leave the Museum's premises in a neat and tidy condition.
- 4.5 The Company warrants that the Company has obtained the necessary immigration authorisation to allow the Company to work legally for the Museum for the Term (whether in the United Kingdom or at another location).
- The Company shall provide all necessary details and/or documentation as 4.6 requested by the Museum from time to time to enable it to conduct relevant security clearance checks (including checks by the Disclosure and Barring Service (or its successor(s)) if applicable) prior to and during the Term for the Company, the cost of such security checks to be met by the Museum. The Company agrees that the Museum reserves the right and unfettered discretion to refuse access to the Museum's premises to the Company and to terminate this Agreement in accordance with clause 11 if in respect of security clearance by the (i) the Company is not security-cleared, (ii) the Company refuses to provide or release information for the purposes of security clearance or (iii) the Company's security clearance is revoked. The Company will wear or carry valid Museum identification (if pass provided) at all times while on the Museum's premises, produce it immediately upon the Museum's request and return it to the Museum at any time on request by the Museum or upon termination of this Agreement.
- 4.7 In performing its obligations under this agreement, the Independent Contractor shall, and shall ensure that each of any subcontractors shall, comply with all applicable laws, statutes, regulations and codes from time to time in force, including but not limited to the Modern Slavery Act 2015.
- 4.8 The Independent Contractor shall be fully responsible for arranging the Independent Contractor's travel to and from the United Kingdom in connection with the Agreement, including but not limited to all flights, transfers and other travel arrangements, travel insurance and visas, and shall be fully responsible for meeting all costs associated with the above unless costs are agreed in advance by the Museum. The Company must provide to the Museum before the Commencement Date documentary evidence of a valid and appropriate travel and medical insurance policy covering the Company for the Term.

4.9 The Company shall be fully responsible for arranging and meeting all costs of and associated with the Company's accommodation whilst in the United Kingdom for the Term unless costs are agreed in advance with the Museum.

#### 5 RELATIONSHIP

Nothing in this Agreement will create the relationship of agency or partnership or joint venture or employer and employee between the Museum and the Company and no deductions will be made by the Museum from the Fee (as defined in clause 9.1) in respect of income tax liabilities, National Insurance or similar contributions in relation to the provision of the Services by the Company.

#### **6 TAX AND INDEMNITIES**

- 6.1 At all times during the Term or after this Agreement has ended, the Company shall comply properly with the requirements of all relevant legislation and agreements relating to payment of value added tax, corporation taxes, income (including but not limited to the Income Tax (Earnings and Pensions) Act 2003) and other taxes and statutory charges levied in respect of the provision of the Services to the Museum and/or the fees payable to the Company under this Agreement ("the Tax"), and shall be responsible for payment of the Tax.
- 6.2 Where the Company is liable to National Insurance Contributions (NICs) in respect of consideration received under this Agreement, they shall at all times comply with the Social Security Contributions and Benefits Act 1992 (SSCBA) and all other statutes and regulations relating to NICs in respect of that consideration, and shall be responsible for paying all NICs.
- 6.3 The Museum may, at any time during the Term, request the Company to provide information which demonstrates how the Company complies with clauses 6.1 and 6.2 above or why those clauses do not apply to the Company.
- 6.4 A request under Clause 6.3 above may specify the information which the Company must provide and the period within which that information must be provided.
- 6.5 The Museum may supply any information which it receives under clause 6.3 to the Commissioners of Her Majesty's Revenue and Customs for the purpose of the collection and management of revenue for which they are responsible.
- 6.6 The Company will indemnify the Museum on demand on an ongoing basis against:
  - (A) any demands for any income tax and primary and secondary class 1 National Insurance or similar contribution, including any penalties or interest arising from any claim that the Company is or was an employee of the Museum or generally arising as a result of the Museum's use of the Company to provide the Services;
  - (B) any claim whether statutory, contractual or at common law brought by the Company arising out of or based upon an allegation that the Company was an employee of the Museum;

- (C) any penalties or charges incurred by the Museum in connection with the Company's immigration status;
- (D) any claims, proceedings, actions, damages and any other liabilities whatsoever arising out of or in connection with the provision of the Services, in respect of death or personal injury to any person (including, without limitation, any of the Museum's employees), or any damage to property, loss, damages, costs or any other claim for compensation; and
- (E) the Museum's reasonable costs (on a full indemnity basis) of dealing with any such claim or matter under (A), (B), (C) or (D) above.

#### 7 NON-EXCLUSIVITY OF SERVICE

The Company may during the period of this Agreement accept and perform engagements from other companies, firms, organisations or persons which engagements do not infringe upon the Company's ability to provide the Services in accordance with clause 4 provided that the Company shall not accept any employment or engagement by any person, firm, organisation or company which is similar to or in any way competitive with any of the businesses of the Museum or any Affiliates without the prior written consent of the Museum.

#### 8 RESTRICTIONS

- 8.1 The Company shall not:
  - (A) have any authority to incur any expenditure in the name of the Museum without prior agreement with the Museum;
  - (B) accept commissions of any kind concerning the Museum's business or seek profit financial or otherwise from the use of Confidential Information (as defined in clause 12) or procure or encourage any family member or other persons to seek profit financial or otherwise from the use of the Confidential Information, whether directly or indirectly during the period of this Agreement or thereafter except where the Company has received the Museum's prior written permission;
  - (C) alone or in conjunction with any other person:
    - (i) corruptly solicit, receive or agree to receive either for the benefit of the Company or for the benefit of any other person; or
    - (ii)offer or agree to give to any person in the Museum's (or any of its Affiliates') service, or any other third party who has a contract with the Museum or any of its Affiliates,
    - a gift or consideration of any kind as an inducement or reward for doing or not doing anything, or for showing favour or disfavour to any person, in relation to this Agreement or any other agreement to which the Museum or any of its Affiliates are a party; or
  - (D) hold out and/or permit to be held out as having any authority to do or say anything on behalf of the Museum without prior agreement with the Museum.

8.2 The Company shall not publish or cause to be published, and shall take all reasonable steps to ensure that third parties do not publish, any press announcement referring to the Company's work with the Museum without having received prior approval for such publication from the Museum's Press Office. The Company shall allow at least 5 working days for clearance from the Museum's Press Office in relation to approval required under this clause 8.2.

#### 9 PAYMENT

- 9.1 In consideration of the provision of the Services the Museum shall pay to the Company a total fee of £ 65655 (the "Fee") exclusive of any Value Added Tax properly chargeable and legitimately payable in instalments on the completion of the iterations described in Schedule 2 under the section entitled Budget.
- 9.2 The Company is not entitled to a fee in respect of any period in which the Company is unable for whatever reason to provide the Services when requested to do so.
- 9.3 The Fee shall remain firm for the duration of this Agreement. The Company shall send a detailed invoice (with VAT quoted separately) in electronic format to the Museum email address <a href="invoice@britishmuseum.org">invoice@britishmuseum.org</a>. Where it is not possible to send the invoice electronically, the invoice should be posted to BM Purchase Ledger, Finance Department, The British Museum, Great Russell Street, London, WC1B 3DG.
- 9.4 Payment of the Fee will be made by the Museum in instalments upon completion of each iteration of the Services by the dates set out in Schedule 2 under the section entitled Timeframe and conditional upon the Company having complied with the Company's obligations under clause 4.3 above (if applicable).
- 9.5 Payments of instalments of the Fee shall be made no later than the end of a period of 30 days from the date on which the relevant iteration of the Services is completed and the invoice is regarded as valid and undisputed. The Museum will consider any invoices for payments submitted by the Company in a timely fashion and undue delay in doing so is not to be regarded as sufficient justification for failing to treat an invoice as valid and undisputed.
- 9.6 The Company agrees to impose as a term of any contract between the Company and any subcontractor engaged in the provision of the Services obligations similar to those imposed by clause 9.5 above as between the parties to this Agreement.
- 9.7 The Company shall procure that any subcontractor includes in any subcontract which it in turn awards relating to the provision of the Services provisions imposing, as between the parties to that subcontract, requirements similar to those required by clause 9.6 and this clause 9.7.

#### 10 OBLIGATIONS OF THE MUSEUM

Throughout the period of this Agreement the Museum shall afford the Company such access to the Museum's information, records and other material as the Company may reasonably require to provide the Services.

#### 11 SUMMARY TERMINATION

- 11.1 The Museum may summarily terminate this Agreement in writing to the Company if the Company:
  - (A) shall be adjudged bankrupt or enter into any formal composition or arrangement with or for the benefit of the Company's creditors;
  - (B) shall be convicted of a criminal offence other than a minor motoring offence (for which a fine or non-custodial penalty is imposed);
  - (C) shall be unavailable for reasons of sickness or mental incapacity for a continuous period of 30 days or for periods totalling 30 days in any 6 month period;
  - (D) shall have acted in a manner which in the reasonable opinion of the Museum has brought or is likely to bring the Company or the Museum or any Affiliates into disrepute or has impaired or is likely to impair the Company's ability to provide the Services to the Museum;
  - (E) is guilty of misconduct or commits any serious or (having been given notice in writing) persistent breach or non-observance of any of the Company's obligations to the Museum or Affiliates;
  - (F) does not have the necessary immigration permits to work legally for the Museum in the United Kingdom for the Term;
  - (G) in respect of security clearance by the Museum
    - (i) is denied security clearance,
    - (ii) refuses to provide or release information for the purposes of security clearance, or
    - (iii) has the Company's security clearance revoked at any time during the Term.
  - (H) is in breach of clause 8.1(C) or is convicted of any offence under the Bribery Act 2010;
  - (I) (a) in the case of a request mentioned in Clause 6.3 above-
    - (i) fails to provide information in response to the request within a reasonable time (as specified by the Museum), or
    - (ii) provides information which is inadequate to demonstrate either how the Company complies with clauses 6.1 and 6.2 above or why those clauses do not apply to the Company;
    - (b) in the case of a request mentioned in clause 6.3 above, fails to provide the specified information within the period specified by the Museum, or
    - (c) receives information which demonstrates that, at any time when clauses 6.1 and 6.2 apply to the Company, the Company is not complying with those clauses; or
    - (J) is in breach of clause 4.7 of this agreement, or is convicted of any offence under the Modern Slavery Act 2015

11.2 Termination of this Agreement for whatever reason shall not affect the accrued rights of the parties arising in any way out of this Agreement as at the date of termination and in particular, but without limitation, the right to recover damages from the other and all provisions which are expressed to survive this Agreement shall remain in full force and effect.

#### 12 CONFIDENTIALITY

- 12.1 In addition to and without prejudice to the Company's common law obligations to keep information secret, the Company shall not (except for the purpose of performing the Company's duties hereunder or unless ordered to do so by a court of competent jurisdiction) either during the Term or after its termination directly or indirectly use, disclose or communicate Confidential Information and the Company shall use the Company's best endeavours to prevent the improper use, disclosure or communication of Confidential Information:
  - (A) concerning the business of the Museum or any Affiliates and which comes to the Company's attention during the course of or in connection with the Company's engagement by the Museum or any Affiliates from any source within the Museum or any Affiliates; or
  - (B) concerning the business of any person having dealings with the Museum or any Affiliates and which is obtained in circumstances in which the Museum or any Affiliate is subject to a duty of confidentiality in relation to that information.
- 12.2 For the purposes of clause 12.1, Confidential Information means:
  - (A) any information of a confidential nature whether trade secrets, other private or secret information including secrets and information relating to corporate strategy, business development plans, product designs, intellectual property, business contacts, terms of business with advertisers, donors or clients and potential donors or clients and/or suppliers, annual budgets, management accounts and other financial information;
  - (B) architectural plans and studies, master plans, space plans and all strategic property information, or any other Museum policies and procedures not in the public domain;
  - (C) any confidential report or research undertaken by or for the Museum or any Affiliates before or during the Term;
  - (D) lists or compilations of the names and contact details of the individuals, donors, visitors, friends or clients and counterparts of the Museum or any Affiliates;
  - (E) details of the requirements, financial standing, terms of business and dealings with the Museum or any Affiliates of any client, friend or donor of the Museum or any Affiliates;
  - (F) methods of manufacturing, storing, distributing and labelling any products manufactured by the Museum or any Affiliates;
  - (G) contact details of all Museum and employees of the Museum or any Affiliates together with details of their remuneration and benefits;
  - (H) details of litigation, disputes or claims whether proposed, threatened, in progress or lodged with the Museum; and the Museum's strategy for dealing with such claims and other disputes;
  - (I) details of any disputes, grievances or disciplinary proceedings past, pending or threatened involving the Museum;

- (J) matters relating to the Museum's security arrangements including but not limited to the placement of security devices around the Museum, arrangements for VIP visits and the organisation of Museum security staff;
- (K) any scientific and/or conservation processes developed and/or used by the Museum which are not in the public domain; and/or
- (L) information so designated by the Museum or any Affiliates or which to the Company's knowledge has been supplied to the Museum or any Affiliates subject to any obligation of confidentiality.
- 12.3 The restrictions contained in this clause 12 shall cease to apply with respect to any information which would otherwise have been Confidential Information but which comes into the public domain otherwise than through an unauthorised disclosure by the Company or a third party.
- 12.4 Notwithstanding the obligations and restrictions contained in this clause 12, nothing in this Agreement shall operate to prevent the Company making a "protected disclosure" pursuant to the Part IVA of the Employment Rights Act 1996.
- 12.5 Information supplied electronically by the Museum to the Company, marked as "Sensitive" encrypted and password protected shall not be transmitted by the Company to any third party other than in an encrypted and password protected format and with the prior consent in writing of the Museum.
- 12.6 The obligations of the Company under this clause 12 shall continue to apply after the termination of this Agreement (howsoever terminated).

#### 13 INTELLECTUAL PROPERTY

13.1 For the purposes of this clause:

"Intellectual Property Rights" means (i) copyright (including without limitation rights in all original literary, dramatic, musical or artistic works, software, sound recording, films or broadcasts, typographical arrangements and performances), patents, know-how, confidential information, database rights, and rights in trade marks and designs (whether registered or unregistered), (ii) applications for registration, and the right to apply for registration, for any of the same, and (iii) all other intellectual property rights and equivalent or similar forms of protection existing anywhere in the world; and

"Invention" means any method, idea, concept, experimental work, theme, invention, discovery, process, model, formula, prototype, sketch, drawing, plan, composition, design, configuration, improvement or modification of any kind conceived, developed, discovered, devised or produced by the Company alone or with one or more others during the Term and which pertains to or is actually or potentially useful to the activities of the Museum (or any Affiliates) or any product or service of the Museum (or any Affiliates) which pertains to, results from or is suggested by any work which the Company or any employee or consultant of the Museum (or any Affiliates) has done or may do during the Term.

- 13.2 The Company shall promptly disclose and deliver to the Museum in confidence full details of each Invention (whether or not it was made, devised or discovered during the Company's working hours as detailed in clause 4.1 or using the facilities of the Museum, and whether or not the Company considers that by virtue of section 39 of the Patents Act 1977 rights to such Invention fail to vest in the Museum) to enable the Museum to determine whether rights to such Invention vest in the Museum, upon the making, devising or discovering of the same and shall at the expense of the Museum give all such explanations, demonstrations and instructions as the Museum may deem appropriate to enable the full and effectual working, production and use of the same. To the extent that by virtue of section 39 of the Patents Act 1977 rights to such Invention vest in the Company the Museum shall return to the Company any documentation provided by the Company pursuant to this clause 13.2 and the Museum shall keep such details confidential unless or until such time as such details are in or enter the public domain, other than by a breach of this Agreement.
- 13.3 The Company hereby assigns to the Museum with full title guarantee by way of future assignment all copyright (including without limitation rights in all original literary, dramatic, musical or artistic works, software, sound recording, films or broadcasts, typographical arrangements and performances, and also including, without limitation, an irrevocable license to use the name, sobriguet, autograph, likeness, photograph, portrait, caricature, silhouette or voice of any performer), database right, design right and other similar rights for the full terms thereof (including any extension or renewals thereof) throughout the world in respect of all works, designs or materials (including, without limitation, source code and object code for software) originated, conceived, written or made by the Company during the Term (except only those works or designs originated, conceived, written or made by the Company wholly unconnected with the Services or any business activity undertaken or planned to be undertaken by the Museum or any Affiliates) to hold unto the Museum absolutely. Any such assignment shall include the right to sue for damages and/or other remedies in respect of any infringement. For the avoidance of doubt there shall be no requirement for copyright to be assigned to the Museum in the core Company platform and any extensions or replacements thereof, provided that the same are made available on an open source basis so that the Museum shall have the right without restriction to fulfil its obligation to release all functionality for free and/or for commercial use and extension by third parties
- 13.4 The Company hereby irrevocably and unconditionally waives in favour of the Museum any and all moral rights conferred on the Company by Chapter IV of Part I of the Copyright Designs and Patents Act 1988 for any work in which copyright or design right is vested in the Museum whether by this clause 13 or otherwise.

- 13.5 The Company shall, without additional payment to the Company (except to the extent provided in section 40 of the Patents Act 1977, or any similar provision of applicable law) at the request and expense of the Museum and whether or not during the continuance of the Term, promptly execute all documents and do all acts, matters and things as may be necessary or desirable to enable the Museum or its nominee to obtain, maintain, protect and enforce any Intellectual Property Right vested in the Museum (save only to the extent that any Intellectual Property Rights fail to vest in the Museum by virtue of section 39 of the Patents Act 1977) in any or all countries relating to the Intellectual Property Right and to enable the Museum to exploit any Intellectual Property Right vested in the Museum.
- 13.6 The Company shall not do anything (whether by omission or commission) during the Term or at any time thereafter to affect or imperil the validity of any Intellectual Property Right obtained, applied for or to be applied for by the Museum or its nominee, and in particular the Company shall not disclose or make use of any Invention which is the property of the Museum without the prior written consent of the Museum. The Company shall during or after the termination of the Company's engagement with the Museum under this Agreement, at the request and expense of the Museum, provide all reasonable assistance in obtaining, maintaining and enforcing the Intellectual Property Right or in relation to any proceeding relating to the Museum's right, title or interest in any Intellectual Property Right.
- 13.7 Without prejudice to the generality of the above clauses, the Company hereby irrevocably authorises the Museum to appoint a person to be the Company's attorney in the Company's name and on the Company's behalf to execute any documents and do any acts, matters or things as may be necessary for or incidental to grant the Museum the full benefit of the provisions of this clause 13.
- 13.8 The obligations of the Company under this clause 13 shall continue to apply after the termination of the Company's engagement under this Agreement (howsoever terminated).
- 13.9 Nothing in this Agreement shall oblige the Museum (or any other Affiliates) to seek protection for or exploit any Intellectual Property Right.

#### 14 DATA PROTECTION AND FREEDOM OF INFORMATION

- 14.1 The Museum may hold computer records and files containing personal data relating to the Company (including, where necessary, sensitive personal data relating to the Company's health and data held for ethnic monitoring purposes). The Museum requires such personal data for administration, accounting, taxation and management purposes and to comply with its various obligations regarding the keeping of records. The Company's right of access to this data is as prescribed by law.
- 14.2 The Company hereby agrees that the Museum may process personal data relating to the Company (including sensitive personal data) for administration, accounting, taxation and management purposes and may, when necessary for those purposes, make such data available to its advisers, to parties providing products and/or services to the Museum, to regulatory authorities (including HM Revenue & Customs) (on a confidential basis) and as required by law.

- 14.3 The Company acknowledges that the Museum is subject to the requirements of the Freedom of Information Act 2000 ("FOIA") and the Environmental Information Regulations 2004 ("EIR") and shall assist the Museum to respond to a request for information within the time for compliance set out in section 10 of the FOIA. The Museum shall be responsible for determining in its absolute discretion whether information is exempt from disclosure under the FOIA and EIR and the extent of information to be disclosed in response to a request for information. The Company acknowledges that the Museum may disclose information without consulting the Company.
- 14.4 The Company acknowledges and agrees that the Museum may at any time during the Term be subject to a legal duty or central governmental directive to publish prescribed parts or full terms of any contract in the public interest (including without limitation the whole or any terms of this Agreement and the specification/scope of the Services and/or the Fee) and that such legislation or central governmental directive overrides any contractual duty of commercial confidence owed to the Company whether under this Agreement or otherwise and the Company waives any and all rights of claim for breach of commercial confidence against the Museum, its agents and employees, howsoever arising, and shall hold the Museum, its agents and employees harmless in respect of any claim for loss or damage suffered by the Company as the consequence of the Museum's discharge of any duty of law or central government policy to publish prescribed parts or the whole of this Agreement.

#### 15 FORCE MAJEURE

No party shall be in breach of this Agreement if there is any total or partial failure of performance by it of its duties and obligations under this Agreement occasioned by any act of God, fire, act of government or state, war, civil commotion, insurrection, embargo, prevention from or hindrance in obtaining any raw materials, energy or other supplies, and any other reason beyond the control of such party. If a party is unable to perform its duties and obligations under this Agreement as a direct result of the effect of one of those reasons that party shall give written notice to the other of the inability stating the reason in question. The operation of this Agreement shall be suspended during the period (and only during the period) in which the reason continues. Immediately upon the reason ceasing to exist the party relying upon it shall give written advice to the other of this fact. If the reason continues for a period of more than 90 days or substantially affects the commercial basis of this Agreement the party not claiming relief under this clause 15 shall have the right to terminate this Agreement upon giving 30 days written notice of such termination to the other party.

#### 16 GENERAL

- 16.1 No failure or delay by any party in exercising the right, power or privilege under this Agreement shall operate as a waiver thereof nor shall any single or partial exercise of any right, power or privilege preclude any further exercise thereof of that right, power or privilege.
- 16.2 Any notice or communication given or required under this Agreement shall be in writing and may be served by personal delivery or by leaving the notice at or by sending it through the post addressed in the case of the Museum to Great Russell Street, London, WC1B 3DG and in the case of the Company to the Company's address set out in this Agreement.
- 16.3 Any notice sent by post shall be deemed to have been served 24 hours after the time of posting by first class mail and service shall be sufficiently proved by proving that the notice was properly addressed and despatched through the post in a first class pre-paid envelope.
- 16.4 This Agreement supersedes all other agreements whether written or oral between the Museum and the Company relating to the provision of services to the Museum. The Company acknowledges and warrants to the Museum that the Company is not entering into this Agreement in reliance upon any representation not expressly set out in this Agreement.
- 16.5 This Agreement shall be governed by and construed in accordance with the laws of England and Wales and the parties agree to submit to the exclusive jurisdiction of the English Courts as regards any claim, dispute or matter arising out of or relating to this Agreement.
- 16.6 Nothing in this Agreement is intended to confer any rights on any person (other than any of the Museum's Affiliates which may directly enforce against the Company any right conferred on them by this Agreement) not a party to this Agreement under the Contracts (Rights of Third Parties) Act 1999 and no consent of any such person shall be needed for the termination or amendment of this Agreement or any terms hereunder.
- 16.7 This Agreement shall not be amended, modified, varied or supplemented except in writing signed by duly authorised representatives of the parties.



A duly authorised representative of the Museum has executed this Agreement and the Company has executed this Agreement as a deed on or before the date of this Agreement.

Signed by



NEAL SPENCER,

20 April 2017

duly authorised for and on behalf of the Trustees of the British Museum

SIGNED and DELIVERED by **METAPHACTS GmbH** as a DEED in the presence of:

J. May 2017

Witness W Jan.

Witness Peter Haar

Witness
Occupation

Marage

Income

Witness
Address metaphacts

metaphacts GmbH Industriestraße 41 D-69190 Walldorf

T +49 6227 6989965 http://www.metaphacts.com/

#### **SCHEDULE 1**

The Services to be provided by the Company to the Museum

- 1. The Services comprise:
- (a) "Programming Work" (described in paragraph 2 below); and
- (b) "Software Architecture Work" (described in paragraph 3 below)
- (c) "Data Architecture Work" (described in paragraph 4 below)
- 2. Programming Work means the delivery of the functionality as set out below with detailed specifications to be provided by the Museum and agreed with the Company. They also include the User Interface Designs that will be provided by the Museum on an on-going basis in collaboration with the supplier including html.

The minimal delivery under the contract is for functionality based on the requirements provided below and the agreed specifications.

Acceptance will use testing scripts produced by the Museum and agreed with the Company during the course of the work. They will be based on the following:

- 1. The completion of the functionality as set out in the specifications. (Note that the Museum will work collaboratively with the Company and in some cases functionality may be changed by agreement whether on advice from the Company or by means on general agreement where it would be sensible and efficacious to do so). Unit test scripts are also part of the delivered code (software produced under this agreement) and the Museum will also use these tests for acceptance testing.
- 2. Reasonable performance of the functionality and user interface. The Museum require the best performance possible given the nature and functionality of the system when compared to similar production web applications and which would not detract from the use of the system. The system should match and improve on the working prototype.
- 3. That the system conforms to the following standards:
  - a. Code uses consistent and clear notation
  - b. Proper, efficient and effective use of object orientated programming principles no duplication of code.
  - c. That code is documented
  - d. Full REST and Linked Data principles are applied.
  - e. That API documentation is provided.
  - f. That the system uses agreed programming languages.
  - g. That JUnit tests are used and provided to the Museum for testing purposes.
  - h. Data uses valid CIDOC CRM patterns unless otherwise agreed.

#### 3. Software Architecture Work means:

Providing programming expertise on key areas of the system. These include the following:

a) The Software Architect will ensure that the system complies with the requirements and specification and that other parts of the system can be incorporated at later stages. This means understanding all the components of the system and ensuring that they will, when complete, work correctly together. This is particularly important for data argumentation and annotation, clipboard, project registry and data registry and any associated API work.

- b) The Software Architect will contribute to some key elements of the software development.
- c) The Software Architect will ensure that testing has been applied and will review work before submission to the Museum to ensure that its meets requirements.
- d) The Software Architect will keep a continuous communication with the Museum's Development Manager and ensure that all issues are dealt with in a timely manner.
- e) The Software Architect will ensure that any dependencies of the Museum are known to the Museum as early as is possible and agreed dates for Museum's contributions.
- f) The Software Architect will agree specifications details as required by the software development.
- g) The Software Architect will discuss any options and approaches with the Museum providing advantages and disadvantages for the development.
- h) The Software Architect will record time spent on the project notwithstanding the need to complete mandatory functionality as part of the contract.

#### 4. Data Architecture Work means:

Providing expertise on key areas related to data modelling and processing. These will include the following:

- a) The Data Architect will design and create data models and data processing pipelines as needed for the production of CIDOC-CRM compliant data sets.
- b) The Data Architect will ensure compliance with relevant standards (W3C standards, CIDOC-CRM) and principles (such as Linked Data principles).
- c) The Data Architect will provide techniques (conceptual and implementation) for dealing with alignments across heterogeneous data sets, terminologies, and authority data.
- d) The Data Architect will ensure interoperability of results with the applications created under software development.
- e) The Data Architect will ensure data quality through testing and QA to meet requirements.
- f) The Data Architect will discuss any options and approaches with the Museum providing advantages and disadvantages for the data modelling and processing tasks.
- 5. During the Term the Company shall carry out and complete the Programming Work:
  - a. According to detailed specifications reflecting the requirements.
- 6. During the Term the Company shall carry out and complete the Software Architecture Work:
  - a. According to detailed specifications reflecting the requirements.
- 7. In good time before the date for the commencement of each item of work comprised in the Services and more particularly identified in paragraphs 1-3 above, the Museum shall consult with and deliver to the Company a detailed specification in writing setting out the Museum's requirements for deliverables in respect of Programming Work and Software Architecture Work, provided always that:
- (a) such requirements shall not amount to an instruction to the Company to plan for, carry out and deliver the Services not reflecting the original requirements.
- 8. This Agreement is for the development of ResearchSpace in the subject areas stated above. It will build on features already present in the ResearchSpace system but provide more functionality, better usability and sophistication.
- 9. The deliverables must be developed using the ResearchSpace platform which utilises a semantic application development platform from Metaphacts ("metaphacts platform"). See <a href="http://www.metaphacts.com/">http://www.metaphacts.com/</a> and will use predefined Data and Security APIs. The underlying RDF store is Blazegraph (https://www.blazegraph.com).

- 10. Software code will be fully commented and documented and will comply with and make best practices including, MVC and object oriented programming.
- 11. Classes, methods and functions will be reused or constructed to avoid duplication and will not employ hardcoding.
- 12. Applications should be componentised and parameterised as much as possible to increase re-use potential.
- 13. All code must comply with open standards that are managed by a bone fide standards authority unless an exception is explicitly made.
- 14. The Company will work with a User Interface Designer employed by the Museum who will provide information on the user interface design.
- 15. All data (including configuration information) will be saved to an RDF store.
- 16. All data transactions must take place through the Metaphacts and ResearchSpace Data APIs.
- 17. The solution should the same RESTful approach and should ideally use either REACT, AngularJS or an agreed JavaScript framework as the main frontend development tool.
- 18. The Metaphacts platform uses Java and is installed on a Ubuntu operating system
- 19. UI design The components must be consistent with an existing design, look and feel for which style sheets already exist.
- 20. The work will involve working through the specification agreeing the design with the Museum's ResearchSpace Team and finalising the specification using Altlassian Jira. The Company will be expected to work with Jira to project manage the work; report on progress and record ongoing issues. Source code should be deposited in the ResearchSpace Stash (Git) repository. An appropriate testing mechanism suitable for regression testing should be employed. The project currently uses Gherkin.

## **SCHEDULE 2: THE REQUIREMENTS**

# All functional assumes the use of CIDOC CR as the main ontology schema for data Components should be documented

## Iteration 1 – Search improvements, Forms Iteration completion date: May 31, 2017

	Title	Description	Contract Status	Notes	Est.
S1	Refinement of free text Search	The current configuration of free text needs more configuration. The user should have access to keywords and phrase construction similar to those available to systems like Google. For example, the ability to specify exact phrase tokens using quote marks, the ability to use AND, OR and NOT. The work should be informed by some example queries and an optimal solution using solr put into place.	Fixed	Requires representative queries.  Metaphacts will support standard solr search syntax + improve default search configuration	5
S2	Search performance	<ul> <li>performance: the search experience should allow for fast response times</li> <li>consistency: the search components should deliver consistent results (e.g. as of now, due to the LIMIT clause, search results may be inconsistent with result visualisation)</li> <li>relaxation of limitations: The Facet system needs to be optimised for higher numbers of results. E.g., in calculating facets, we currently compute facet values for only 1000 results. This number should be relaxed as far as possible/reasonable</li> <li>As a starting point, we</li> </ul>	Fixed (Time boxed)		10

	1		<del></del>		
		perform analysis to better understand the current bottlenecks and limitations.  Consequently, we will address these bottlenecks. Instruments for optimisation include:  Ordering of results for consistency More intelligent pagination (client side) to only fetch data as it is displayed (lazy loading)  Streaming pagination as results come in / process results as streamed User feedback when query timeout is reached Facets — lazy loading of facet counts, and caching of results. Calculate certain things only on demand (as user requests), e.g.			
		FC explicitly selected by		7.	
		the user.		•	
S3	Preparation for the incorporation of the FORTH alignment work	The work being done by FORTH requires incorporation into the system.  Incorporation involves:  • modification of the ETL process to materialise alignments • extension of UI components (tree selector and faceting) to support multiple, aligned thesauri	Fixed	The current BM thesauri is used. A user selects a term and the narrower terms are automatically selected.  In the alignment system it would also be selecting narrower and exact matches that have been aligned.  Facets show the values of the thesaurus that has been selected by the user	10
		On the UI side, we will support a global selector that allows to specify			

F1		whether to use local or global (aligned) thesauri.  If thesauri have been aligned to Getty and Getty is the displayed thesauri then the results should include all terms that are narrower than the Getty term that have been assigned as narrower by the alignment tool.  Initial test can be done by  Loading in the Getty thesauri Configuring some alignments to simulate the results of the tool.  Checking results.	Fixed	This should amongst	5
	tree view picker (e.g. thesauri)	We need to extend the field configurations to support hierarchical selection, need to expose tree selector as UI component for forms.	Tixed	other things support the use case of selecting and adding terms into a hierarchical thesaurus in forms, but be schema agnostic.	,
F2	default value in field catalogue	We need to extend the field configurations to support default, need to expose default values in all input components. (Including validation of default values against datatypes)	Fixed		2
F3	Adding Images	We will only manage references / URLs of images.	Fixed	We will only manage references / URLs of images.	2
F4	Asserted images to appear on the canonical search	The user can source images and add them quickly (with metadata and IP information, e.g. via existing file upload). This asserted data can then be used in the mini template displays.	Fixed		1

Iteration 2 – Data Processing, Public Endpoint Iteration Completion Date: June 30, 2017

	Title	Description	Contract Status	Notes	Est
	FRs and Display Labels	Refinement of Display labels and FRs  1. Multiple copies of the same result are shown in the results pane e.g. if you add both to the clipboard then only one appears. E.g Gaifu kaisei 凱風快晴, paper, Edo Period (1906,1220,0.525). This may be caused by objects having multiple titles. The system therefore needs to ensure that one display title is created — per object or that only one display title is displayed.  2. Additional FRs for data not currently searchable and new "type" searches based on separating out other authorities.  3. Some things are currently not searchable and require the design of new FRs.	Fixed (Time Boxed)	Should be documented to assist additional and future work. E.g. issues, lessons learnt, approach, best practices.etc)	10
	Filtering on CRM types	It should be possible to filter the results by specific CRM entities and provide user defaults.  For example, a dataset contains THINGS that are both Information carriers (like photos) and Manmade object like pots. The user can specify a type, but more broadly the user should be able to declare the CRM level of Thing.  E.g. Give me just Information Carriers (Photos, Pictures etc.)  We will implement this using existing search functionality by introducing new FCs/FRs.	Fixed		2

D3	ETL – creating the bridge between data inputed through the Forms and the RS Search component	E.g. The Hokusai Forms instance is setup to allow entering raw data in the forms. The project will also import RDF data from other museums to be edited and enhanced using the created forms. To support the RS search the ETL needs to be run and new FRs specific to the new datasets added. As data is continuously updated, the ETL will need to be rerun.  Ideally, this process should be	Fixed (Time Boxed)	UI to see and change parameters and be able to run it and see errors.  This should have more user orientated documentation	3
		automated with minimal down- time. Currently, this would be done in a series of steps: create new script to extract the raw-data from the forms instance, run the ETL and upload the data. This means the triplestore should be in "freeze" mode until the ETL finishes.			
D4	Sample Dataset	Creation of a sample dataset that takes records from across the range.	Fixed (Time Boxed)	The aim would be to select records across a whole dataset and construct the associated authorities to make it whole for RS purposes. Should work across any CRM dataset	3
D5	Endpoint	To complete the endpoint work (templates), test and prepare publishing a new instance of the BM endpoint. To make optimisations and add additional agreed enhancement within the allocated time, e.g. specific http: API calls.	Fixed (Time Boxed)	Operation and maintenance of the endpoint is responsibility of the BM	5

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Iteration 3 – Setup and Distribution

**Iteration Completion Date: July 31, 2017** 

#	Title	User Story	Contract	Notes	Est.
			Status		
SD1	LDAP Implementation	The project requires a server/client component that is part of the standard install that provides LDAP functionality for changing passwords, adding and removing groups, adding and removing accounts from groups and user profile information. Outputs - Provisioning of working open source LDAP server as docker image (Apache) Provisioning of password manager (PWM) server as docker image. Documentation of best practices for setup within ResearchSpace platform	Fixed		5
SD2	Separate out databases	We need to be able to separate read-only repository (with canonical data) from read/write repository with user data (e.g. forms, assertions, annotations, clipboard etc.)	Fixed	The idea is to have component similar to <semantic-form>, which takes list of field IRIs (can be also specified with sparql query using helper functions). Inside this component</semantic-form>	10

				one will be able to reference fields to specify the template that should be used for visualization.  We are also going to support configurable default visualizations that will be applied if one omit custom template.	
				(when we discussed this previously the effort estimate was less. Need to understand the larger effort)	
SD3	Federated Setup	Support search to work on multiple repositories in a federated setting. In the most simple case, search will be directed towards one selected repository (targeted federation), in a more advanced case one could attempt search over multiple selected federation members.	Fixed	It should be noted that in a federated setting, the query performance of a centralised integration cannot be guaranteed.	15
		(All other components, including templated visualisation, are excluded from this initial work. I.e. visualisation would need to be taken			

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	care of by the respective data publisher of the data set)		
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### 1 Additional Notes on the Development Approach

ResearchSpace development is split into front-end and back-end development. The interaction between the two is governed by the metaphacts platform and specifically its APIs and Widget Architecture.

#### 1.1 Back-End Development

Back-end development will be carried out in the Java programming language, according to the official Oracle Java 8 release. All code will be tested using Oracle Java 8 on the Ubuntu 14.04 LTS release.

The deliverables will be provided with:

- Javadoc-based basic documentation
- Automated build scripts (e.g. Maven, sbt), including test scripting;
- Junit tests

Communication with front-end functionality will be via stateless and HTTP-based RESTful APIs, exchanging either JSON and/or RDF data. Ideally JSON-LD will be used. All APIs will be documented with reference made to test cases and subject to documentation requirements below.

#### 1.2 Front-End Development

Front-end development will be carried out in HTML-based Javascript. All code will be tested using the latest version of Chrome and Mozilla Firefox officially released at the delivery date on Windows 7+, Mac OSX 10 and Ubuntu 14.04. The software should also be tested against Ubuntu 16.04.

Javascript is statically typed through the use of TypeScript.

Front-end code is built using React. Front-end developments are packaged using Webpack. Front-end development uses HTML5 features as preference where needed, be tested for validity with the W3C tools. It is assumed that front end code will include appropriate user messages and information (e.g. when waiting, or saving, for conformations, etc

#### 1.3 Coding Standards

All development will be liberally commented, indented according to best practices, and with readability required over brevity in variable naming. Best practices are documented collaboratively, for Java and JavaScript, on the ResearchSpace Confluence.

#### 1.4 Version Control

All code will be committed to the relevant component's git repository; either that provided by ResearchSpace (stash.researchspace.org) or provided by the supplier and mirrored by ResearchSpace.

#### 1.5 Continuous Integration

Completed iterations will be capable of inclusion in the continuous integration server at jenkins.researchspace.org for extension by the Museum or third parties. The Company will provide support in setting up automated builds.

#### 1.6 Documentation

All software products, designs and APIs will be documented either:

- At the ResearchSpace confluence, or
- Using the supplier's Web-based documentation solution, with PDF-based archives of the documentation provided at the end of each iteration.

#### 1.7 Tracking issues by JIRA

All the requirements and possible bugs will be tracked in JIRA (jira.researchspace.org).

Before starting to work on an issue, the developer (internal or external) will break it down into sub tasks. The developer will update the status of issue/sub task to report on progress and the assignee field.

#### 1.8 Database backend

It is assumed that an RDF database is in place and managed by the Museum. The Company can offer support for the setup, deployment and operations of the Blazegraph triple store. Further, the Company can provide support for the migration, conversion and data preparation of RDF data.

These services are not covered by this proposal. Quotes are available on request.

#### 2 Timeframe

The iterations will be completed with the following target dates: (assuming a start of development on April 10)

- iteration 1 (Search Improvements, Forms): May 31 2017
- iteration 2 (Data Processing, Public Endpoint): June 30 2017
- iteration 3 (Setup and Distribution): July 31 2017

## 3 Budget

"The developments are offered for a fixed price of 65655 GBP which should include all requirements, but at least all "fixed" requirements."

The fixed price offer is based on the following effort estimates and rates:

Pos.	Days	Description	Rate	Total
1		Iteration 1:		
	10	Software Developer	495 £	4950 £
	25	Data Architect	650 £	16250 £
	5	Software Architect	770 £	3850 £
2		Iteration 2:		
	0	Software Developer	495 £	0£
	23	Data Architect	650 £	14950 £
	4	Software Architect	770 £	3080 £
3		Iteration 3:		
	5	Software Developer	495 £	2475 £
-	25	Data Architect	650 £	16250 £
	5	Software Architect	770 £	3850 £
			Total	65655 £

Prices quoted are exclusive of VAT and (travel-) expenses.

## **SCHEDULE 3 THE STAFF**

Software Architect: Dr. Peter Haase

Software Developer: Artem Kozlov, Johannes Trame Data Architect: Dr. Andriy Nikolov