

HANDLE SYSTEM SERVICE AGREEMENT (Ver. 3)

This HANDLE SYSTEM[®] SERVICE AGREEMENT (Ver. 3) ("Service Agreement") is between Corporation for National Research Initiatives ("CNRI"), having an office at 1895 Preston White Drive, Reston, VA 20191-5434, and the Individual or Organization that has entered into the HANDLE SYSTEM PUBLIC LICENSE AGREEMENT ("HSPL") and registered with CNRI as a Resolution Service Provider ("RSP") (known collectively as the "Parties"). This Service Agreement is effective as of the date of signature by RSP as provided herein (the "Effective Date") and is subject to the terms and conditions of the HSPL entered into and maintained in effect between the Parties.

1. **Prefix(es).** CNRI hereby authorizes RSP to provide identifier and/or resolution services only with respect to identifiers that start with the prefix or prefixes allotted to RSP by CNRI, subject to the terms of this Service Agreement. It is agreed by the Parties that any prefix allotted to RSP hereunder may not be used to disrupt the integrity or operation of the Handle System in any manner. All identifiers created with each RSP prefix shall be resolvable by RSP's resolution service. The CNRI Handle System Administrator will notify RSP of the prefix or prefixes allotted to RSP and register each such prefix in the Global Handle Registry[®] ("GHR"). This notification will be sent by electronic mail to the Administrator designated by RSP for each prefix.

RSP acknowledges and agrees that the authority granted to RSP to use the prefix(es) allotted to it by CNRI hereunder, is personal to RSP and that this authority may not be assigned or transferred by RSP to any other party without the prior written consent of CNRI. Without limiting the generality of the preceding sentence, RSP further acknowledges that the allotment of a prefix to RSP by CNRI, as provided herein, confers no property, ownership or proprietary rights on RSP with respect to such prefix.

Other than the information provided by the GHR in ordinary resolution requests, the collection of administrative data associated with each prefix is considered confidential by CNRI and will not be released in any form unless ordered by a court or governmental agency of competent jurisdiction, or unless otherwise agreed to in writing signed by the Parties. Administrative data, other than RSP's account information, that have been received by CNRI from RSP and are required to maintain the overall integrity of the GHR shall be retained in the GHR.

2. **Policies & Procedures.** RSP hereby agrees that the use of the Handle System technology, including the running of HANDLE.NET[®] software, and any RSP deposit data, administrative data, or prefix data that have been entered into the Global Handle Registry shall be subject to the Handle System Policies & Procedures ("Policies") that are posted at <http://hdl.handle.net/4263537/5012> as of the Effective Date and are incorporated herein by reference. RSP agrees to make reasonable good faith efforts to provide identifier and/or resolution services in accordance with the Policies.

The Policies may, from time to time, be modified by CNRI, including as a result of consultation with interested bodies, including the Handle System Advisory Committee. Any such modifications to the

Policies made and posted at <http://www.handle.net/> during a given Term shall become effective for Licensee on the next following renewal date of the Service Agreement, unless otherwise agreed upon in writing by the Parties.

In the event RSP is unable or no longer intends to provide identifier and/or resolution services for identifiers starting with the prefix or prefixes allotted to RSP by CNRI, RSP shall promptly notify CNRI and shall take steps to find an appropriate alternate party to provide such identifier and/or resolution services and notify the Handle System Administrator of the alternate party. If CNRI, in its sole discretion, consents to the alternate party, then once the alternate party is authorized by CNRI to use the Handle System technology and enters into a Service Agreement with CNRI to act as a RSP, the relevant set of records shall be transferred by RSP to that alternate party for such identifier and/or resolution purposes. Unless otherwise agreed to in writing between CNRI and RSP, if no alternate party is designated by RSP, RSP agrees that CNRI, at its sole discretion, may elect to provide such services itself, or through another party, or may record and/or otherwise make known that the relevant identifiers, if any, are no longer resolvable.

3. **Fees.** In consideration for the Handle System services provided by CNRI under this Service Agreement, RSP will pay the following fees to the Handle System Administrator:

- For a single allotted prefix, a one-time registration fee of \$50 ("Registration Fee"), plus an annual service fee of \$50 ("Annual Service Fee"). For prefixes derived from the single allotted prefix, the Registration Fee shall be waived if the RSP remains the same; however, the Annual Service Fee shall apply for each derived prefix.
- For each additional consecutive twelve-month period after the first year, there is no Registration Fee, only the Annual Service Fee. The amount of the Annual Service Fee may be reasonably adjusted by CNRI from time to time.
- In addition to the one-time Registration Fee of \$50, the RSP may choose from one of two pre-payment options of the Annual Service Fee. Five years of \$50 per year service fees may be prepaid for a total of \$250, and ten years may be prepaid at a discounted fee of \$425.
- CNRI reserves the right to waive the Registration Fee and/or Annual Service Fee on a case-by-case basis at its sole discretion. A request for waiver shall include the reasons for such request and shall be made in writing addressed to the Handle System Administrator at hldadmin@cnri.reston.va.us.

4. **Technical Support.** CNRI personnel will provide RSP via electronic mail with occasional consultation on routine technical matters during CNRI's normal business hours during the Term of this Service Agreement, and RSP will inform CNRI of the RSP technical point of contact for this purpose. At its sole discretion, CNRI may provide additional technical assistance to RSP under a separately negotiated Technical Support Agreement.

5. **GHR Services.** In accordance with the terms of this Service Agreement, CNRI shall make reasonable efforts to provide RSP with reliable Global Handle Registry services on a 24-hour, 7-day a

week basis and to maintain the overall operational integrity of the Handle System. It is understood and agreed, however, that, unless otherwise agreed in writing by the Parties, CNRI does not guarantee any specific level of GHR availability and performance.

Without limiting the preceding sentence, CNRI shall not be liable for any GHR availability or performance failures or delays in the performance of any of its obligations hereunder due to causes beyond its reasonable control (force majeure condition), including, but not limited to, fire, strike, war, riots, terrorism, judicial action, shortages of labor, materials or equipment, failures or delays in delivery by CNRI's vendors or suppliers. If, despite the reasonable efforts of CNRI and RSP, the force majeure condition persists beyond sixty (60) days, either CNRI or RSP may send a written notice to the other terminating this Service Agreement.

6. Disclaimer. CNRI IS MAKING THE HANDLE SYSTEM TECHNOLOGY AND SERVICES AVAILABLE TO RSP HEREUNDER ON AN "AS IS" BASIS. CNRI EXPRESSLY DISCLAIMS AND EXCLUDES ALL WARRANTIES (INCLUDING WITHOUT LIMITATION MERCHANTABILITY, SATISFACTORY QUALITY, AND FITNESS FOR A PARTICULAR PURPOSE OR USE) AND REPRESENTATIONS, WHETHER EXPRESS OR IMPLIED, IN RELATION TO RSP'S USE OF THE HANDLE SYSTEM TECHNOLOGY, INCLUDING SOFTWARE, INFORMATION, AND PREFIX(ES), OR IN RELATION TO CNRI'S PERFORMANCE OF ANY SERVICES IN CONNECTION WITH THE HANDLE SYSTEM.

7. Limitation of Liabilities. CNRI WILL NOT BE LIABLE TO RSP OR TO ANY THIRD PARTY (INCLUDING WITHOUT LIMITATION USERS OF RSP IDENTIFIER AND/OR RESOLUTION SERVICES), FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL, CONSEQUENTIAL, EXEMPLARY, OR PUNITIVE DAMAGES OF ANY CHARACTER INCLUDING, WITHOUT LIMITATION, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES, LOSS OF USER DATA OR PROFITS, OR BUSINESS INTERRUPTION, HOWEVER CAUSED AND ON ANY THEORY OF CONTRACT, WARRANTY, TORT (INCLUDING BUT NOT LIMITED TO NEGLIGENCE AND INFRINGEMENT OR MISAPPROPRIATION OF INTELLECTUAL PROPERTY RIGHTS), PRODUCT LIABILITY OR OTHERWISE, BASED ON OR ARISING IN ANY WAY OUT OF THE PERFORMANCE OF THE RIGHTS AND OBLIGATIONS OF THE PARTIES UNDER THIS AGREEMENT, EVEN IF CNRI IS ADVISED OR IS OTHERWISE AWARE OF THE POSSIBILITY OF SUCH DAMAGES. RSP AGREES THAT THE ENTIRE LIABILITY OF CNRI WILL IN NO EVENT EXCEED AN AMOUNT EQUAL TO THE FEE PAID BY RSP UNDER THIS SERVICE AGREEMENT.

8. Indemnification. RSP shall indemnify, defend, and hold CNRI harmless for and against all claims for personal injury, property damage, loss of profits, loss of use, or any indirect, consequential, punitive or special damages, whether based upon a claim or action in contract, warranty, negligence, or other tort, based on or arising out of or relating to RSP's provision of services pursuant to this Service Agreement.

9. Term & Termination. The term of this Service Agreement shall be for an initial one (1) year period which shall begin on the Effective Date of this Service Agreement ("Term"), and the Term shall automatically be extended for successive periods of one (1) year each, unless (a) either Party provides written notice to the other Party at least ninety (90) days prior to the renewal date that the Service Agreement shall not be renewed, (b) otherwise agreed in writing, or (c) terminated by CNRI, at its sole

discretion, upon a material breach of this Service Agreement by RSP. Parties that wish to have the Service Agreement extended for longer periods may request extensions for successive periods of up to five (5) years each and, if approved, the service fees shall be adjusted accordingly. Following termination of the Service Agreement, the records and other data associated with RSP prefix or prefixes may be maintained by CNRI in the GHR, at CNRI's sole discretion, at no fee to RSP. Further, it is understood and agreed that, following termination of the Service Agreement, unless otherwise agreed in writing by the Parties, CNRI is under no obligation to provide Global Handle Registry services for prefix(es) previously allotted to RSP, and, at its sole discretion, CNRI may re-allot any or all of such prefix(es) to another party, who may thereafter use the same to provide identifier and/or resolution services.

10. Trademarks. Handle System, Global Handle Registry, Handle.net and CNRI are registered trademarks of CNRI, and CNRI may have or adopt other marks related to the Handle System technology and services described herein ("CNRI Trademarks"). The CNRI Trademarks may not be used to endorse or promote any software, services or products of Licensee, or any third party, except with prior written approval of CNRI, which it may grant or deny at its sole discretion. Inquiries concerning use of CNRI's Trademarks should be addressed to the Handle System Administrator at hldadmin@cnri.reston.va.us.

11. Miscellaneous provisions.

a. This Service Agreement is transferable by CNRI provided that CNRI transfers and assigns all rights necessary to allow the transferee to fully perform CNRI's obligations hereunder, and that the transfer is to an organization that has agreed to operate the Handle System in the public interest. This Service Agreement is personal to RSP and, without prior written consent from CNRI, which consent may be granted or withheld in CNRI's sole discretion, shall not be assigned by any act of RSP, including without limitation, sale, merger, or other transfer of assets by RSP, bankruptcy, or by operation of law. Any purported transfer or assignment without CNRI's prior written consent shall be deemed a material breach of this Service Agreement.

b. In the event that RSP breaches this Service Agreement, CNRI and RSP agree that damages will not provide an adequate remedy for CNRI. Therefore, in the event of a breach or threat of breach, RSP acknowledges that CNRI shall be entitled to obtain injunctive relief, in addition to any other relief available at law or equity.

c. To the extent Federal law is not applicable, this Service Agreement shall be governed by and interpreted in all respects by the law of the Commonwealth of Virginia, excluding Virginia conflict of law provisions, and the courts within such State shall be the only courts of competent jurisdiction. Nothing in this Service Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between the Parties.

HANDLE SYSTEM POLICIES & PROCEDURES

(as of September 21, 2005)

a. Overview

The Handle System[®] is a component of the Digital Object Architecture developed by CNRI. It provides a means for uniquely identifying Digital Objects (“DOs”) and other network resources, and for using the identifiers to store and retrieve records containing state information about the DOs. It also provides an administrative mechanism for managing identifiers over time.

The term Digital Object is used to denote structured data in the form of a set of bit sequences that can be interpreted by a computer or other computational facility. Each sequence consists of a type-value pair, at least one of which is the identifier for the DO. The sequences need not all be stored in one place, or stored at all, but if they are stored, they are generally assumed to be accessible from one or more known locations.

One form of state information is the location(s) of the DO. Another form is selected metadata about the DO, generally known as key metadata. Type information is an example of key metadata. Type information itself is stored as DOs and can be retrieved by a formula that converts type strings into identifiers. Types used in identifier records must be resolvable in the Global Handle Registry[®] (“GHR”). The types intended for general use by the public are stored in the GHR, but may also be stored by a Resolution Service Provider (“RSP”), if desired.

Each identifier consists of a prefix and a suffix separated from the prefix by a slash “/”. The prefix is not permitted to contain a slash; and the suffix may be any string selected by the Administrator for that prefix. The top level of the Handle System, known as the Global Handle Registry, contains all the prefixes, and may contain all, some or none of the identifier records associated with each prefix. Prefixes derived from allotted prefixes are known as derived prefixes. Each derived prefix is also considered an allotted prefix, and, unless otherwise authorized by the Handle System Administrator, each such derived prefix must be registered in the GHR.

Specific prefixes have been reserved by the Handle System Administrator for certain general categories. Apart from such prefixes, prefixes shall generally be allotted in order beginning with unassigned five digit numbers and increasing thereafter.

RSPs may wish to operate identifier and/or resolution systems using the Handle System technology that have different interface specifications. To operate such a system, RSP must request a waiver from the Handle System Administrator of the requirement that RSP services be compatible with the Handle System interface specification. As part of the registration procedure, RSP should request such a waiver and provide the requested information necessary for the GHR to have an effective means of responding to resolution requests relating to RSP's alternative identifier and/or resolution system. There may be additional fees associated with the registration process in this case. The GHR will allocate a prefix (or its functional equivalent) for the alternative system that will be used by the GHR to respond to resolution requests involving the alternative system. The Handle System Administrator will work with RSP to install the alternative interface software in the GHR. Compliance with these procedures will enable interoperability with the Handle System, even though the interface specifications may differ.

Information about the Handle System has been documented in IETF RFCs 3650, 3651, and 3652 which may be found at the Handle System Internet site: <http://www.handle.net>. This work was supported in part

by the Defense Advanced Research Projects Agency under Grant No. MDA 972-99-1-0018 and Grant No. MDA 972-92-J-1029.

b. General Service Considerations

Each Resolution Service Provider shall maintain a reasonable quality of service, including, but not limited to, the following considerations:

- Compatibility and smooth interaction among RSP system components, and the interaction of those components with the GHR as well as with users of RSP's identifier and/or resolution services;
- Consistency and reliability in service performance;
- Proper system management and performance tracking;
- Non-interrupted access to/from the GHR; and
- Overall system security.

In the event RSP enters into an agreement with a third party to provide its identifier and/or resolution services using a prefix allotted to RSP, or derived from such prefix for which the RSP has paid the requisite fee, the third party is not required to enter into a separate Service Agreement with CNRI for this purpose, but must register with CNRI and agree to be bound by the Handle System Public License. In addition, RSP shall flow down in its agreement with the third party the applicable terms and conditions of its Service Agreement with CNRI, it being understood that responsibility for fulfilling the obligations of the Service Agreement remain with RSP.

c. Specific Operational Considerations for an RSP

Resolution of an identifier with a given prefix produces an identifier record containing state information, such as location information for RSP services. Accordingly, RSP shall:

- Maintain all such identifier records at a single identifying address (e.g., IP Address, service identifier or other system coordinates), which shall be provided by the RSP Administrator to the Handle System Administrator, and which is sufficient to permit the GHR to redirect a client application to the RSP service where the identifier records will be resolved;
- Provide identifier and/or resolution services at the single identifying address for RSP's identifier records; such services shall be limited to those that are under the common ownership and control of RSP;
- Provide secure maintenance of Private Keys by each RSP Administrator; and
- Provide timely reports to the Handle System Administrator (hdladmin@cnri.reston.va.us) of service configuration changes, such as RSP moving its current identifier and/or resolution services location.

If RSP wishes to provide services that do not meet the criteria listed above, RSP should contact the Handle System Administrator to request permission for alternate arrangements, and CNRI, at its sole discretion, reserves the right to determine whether to permit such services. For example, RSP may wish to operate its identifier and/or resolution services ("RSP Services") using multiple components (e.g., multiple machines, multiple software instances or mobile programs), where each component has its own identifying address. Specifically, an RSP may wish to run a single resolution service, using a single prefix,

where the identifier records are distributed across multiple identifying addresses, or, where a single IP address is used with different network ports. In such cases, RSP shall provide to the Handle System Administrator sufficient information about the separate components of RSP Services; and additional charges may apply.

If RSP wishes to operate private identifier and/or resolution services (such as services maintained behind a firewall that are not publicly accessible), it must so notify the Handle System Administrator in advance. Upon notification, RSP's prefix(es) will be retained in the GHR, which will provide resolution information to the extent such information is made available to it by RSP. If no such information is provided by RSP, the GHR will state that identifiers beginning with RSP's prefix(es) are not publicly resolvable.

RSPs that wish to allocate derived prefixes to themselves or to third parties for purposes of providing identifier and/or resolution services, and not have such derived prefixes known to the GHR, must notify the Handle System Administrator for approval at the time of registration, or any time thereafter, provided that such notification is received and approved prior to using such derived prefixes. Permission for such delegation of authority will generally involve qualification of the RSP making the request, payment of additional service fees and compliance with procedures commensurate with such delegation of authority. Since these derived prefixes will not be known to the GHR, the RSP generating them must agree to provide resolution services for these prefixes and to maintain all the necessary information to assure that identifiers beginning with these prefixes are resolvable.

d. GHR Considerations

Although identifiers may be resolved by the GHR, RSP will generally choose to resolve identifiers directly from its own service without using the GHR after it has registered and been given a prefix from the Handle System Administrator.

In addition to each prefix and its related administrative data, RSP may, at CNRI's sole discretion, store a limited amount of additional identifier information in the GHR for resolution, backup or for other purposes under a separately negotiated Technical Support Agreement between CNRI and RSP.