

# Projects Programme – 2004/05

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## 1. Domain Name Information Look-Up Services

We are planning a set of changes to our existing WHOIS services and the introduction of two new services, a new Public Register Subscription Service (PRSS) and a new Domain Availability Checker (DAC). The policy for these services has previously been agreed by our Policy Advisory Board (PAB).

Currently our WHOIS services are used in a particular way that we do not think is appropriate but we understand why given the lack of alternatives. This use is high volume lookups to determine the availability or status of a domain. Unfortunately we also have high volume lookups made by people who are harvesting name and address data for invoice scams or other unsuitable purposes. Distinguishing between the two becomes difficult.

### 1.1 Domain Availability Checker (DAC)

Our solution is to introduce the DAC, which allows tagholders to have high volumes of lookups to check the availability and status of domains without revealing any name or address data.

We anticipate three main uses of the DAC

- When a tagholder receives a request to register a name they may wish to do a quick check to see if already exists. The DAC is designed to reply to this check in real-time.
- If the domain does exist then many tagholder generate a list of alternatives and then lookup those alternatives to see what is available before offering them to the customer. With DAC that process is again real-time.
- There are a number of tag holders that offer a “wait list” service to try to quickly register names as they are cancelled. They will be able to use the DAC to monitor the status of those domains they are interested in.

This also brings us a number of benefits

- Splitting off this usage from the WHOIS will mean that we can more easily identify WHOIS abuse and take appropriate action.
- Searching for domain name information on the DAC will also be quicker and less computationally expensive than using the Automaton because the Automaton has to verify cryptographic signatures for each message.

The DAC is due to be launched during the first quarter of 2005

## 1.2 WHOIS2

This service has been running in beta for some time. It is intended to allow those people who operate a whois gateway access to our whois service. This is in such a way that our anti-abuse mechanisms can recognise they are a gateway but can still block clients of that gateway that abuse the system. It operates by a slight amendment to the whois protocol to include the address of the client that made the request of the gateway.

This service will be available on a subscription-only basis and we will be contacting all the beta testers that we are aware of to ask them to move over to the new service.

The WHOIS2 allows the gateway to send queries at an unlimited number per second but limited to a maximum of 100,000 queries per day.

The WHOIS2 is due to be launched during the first quarter of 2005.

## 1.3 WHOIS

The number of searches allowed on the public WHOIS will be greatly reduced, soon after we introduce the WHOIS2 and DAC services. Currently we rate limit at 1 per second, averaged over a five minute period, and the daily limit is therefore 86,400. The new limits will still be 1 per second but averaged over 30 seconds and limited to a maximum of 1,000 lookups per day.

These changes to the WHOIS will be made approximately one month after the DAC/WHOIS2 goes live.

## 1.4 Public Register Subscription Service (PRSS)

This service replaces the previous PRSS service that has been gradually phased out. There are a number of people who have a requirement to search the register for domain names that contain particular phrases or need to know what domains a particular registrant holds. These people are normally lawyers or others involved in protecting intellectual property.

The new PRSS service will be offered on a subscription-only basis and will allow a search of the register by domain name or registrant name for all occurrences of a particular phrase. The search syntax will be fairly detailed to allow more sophisticated searching.

Each user will be set a daily limit of 3,000 search results that they can view. This is necessary to prevent this system being used to obtain a full or substantive copy of the register database. It is not possible to use this system to bypass the consumer opt-out on display of personal information, opted-out information will not be available.

The new PRSS will be launched during the second quarter of 2005.

## 2. New member and tag holder interfaces

Our biggest single area of development at the moment is providing new interfaces for tagholders to access our systems. However we have a requirement to restructure our data in order to support much of the work we are engaged in and this will result in significant changes for tagholders in the way they access the data we store.

## 2.1 Data Restructuring

We are looking to restructure the way we store data because the current structure does not join up information about customers. This leads to the following issues:

- we do not know if a tagholder is also a registrant of some domains,
- we cannot tell the difference between multiple domains with the same registrant and those where the registrant information just looks the same.
- we cannot tell if two contacts with the same name and address are the same person or not.

We have a proposal to join up all of this information by changing the structure of our data. This starts with creating an account for each customer, under which records are kept of each service that they take from us. Some of these services are well known, such as 'tagholder' or 'member', but in addition we will introduce the service of 'registrant' that then joins up the registration of multiple domains for one legal registrant. Finally we will introduce a new table of contacts, with each contact having a unique identification number to enable it to be used in many places. As part of this change some of the different types of contacts and number of contacts recorded for different types will change. For example, multiple billing contacts will be allowed per tag, whilst registrant technical contacts will disappear.

This proposal is currently being consulted on and the consultation period will close at the end of February. We plan to implement the new data structure as soon as possible after that. Part of the proposal discusses how to make the new structure accessible in a fully backwards-compatible way so that tagholders are not required to make any immediate changes to their systems.

The data restructuring project should be completed by the end of the third quarter of 2005 though some elements will appear as part of the other projects mentioned below.

## 2.2 Extensible Provisioning Protocol (EPP)

This is a new standards-based system for accessing the register database to register and modify domain names. The functionality is very similar to that provided by the Automaton but EPP is a very different way of accessing that functionality.

With EPP a tagholder system connects securely to the EPP server and then authenticates with the server. They can then send instructions to the EPP server without any further security checks, and in most cases these instructions will be acted on immediately and an acknowledgement generated. Because the main delay in the Automaton is processing the PGP signature this should mean that the EPP server responds in seconds and not minutes. The tagholder system can leave this connection open all day if required and continue to send instructions. Each of these instructions is an XML based format that is defined by the standard.

The intention of EPP is that once a tagholder has written some software to talk to an EPP server (or bought some) then they can adapt it to talk to other EPP servers run by other registries without much change. However all registries that intend to use EPP need to have their data in a format that support EPP, hence one of the reasons we are restructuring our data.

There is no intention of turning off the Automaton once EPP is up and running. Both systems will work side by side for the foreseeable future.

EPP should be launched by the end of the third quarter of 2005.

## 2.3 Tag holder web interface

We are well underway with the development of a web based system to allow tag holders to register and manage their domains as well as the information that we hold about them as tag holders. It will also provide functionality that is currently only available through telephone or email support, such as change the PGP key for a tag.

The tag holder web interface will be launched by the end of the second quarter 2005. There are likely to be a number of phases to this project so that some elements may be available before then.

### 3. Internet Engineering Projects

In accordance with our strategy of becoming a centre of technical excellence, our work in this area has been about participation in the development of new technologies through the Internet Engineering Task Force (IETF) and developing test beds for tag holders to interact with these technologies.

#### 3.1 DNSSEC

This is a set of extensions to DNS that aim to add cryptographic signatures to answers to DNS queries so that the recipient can be assured that they came from the DNS server they claim to have come from. However as this work neared completion we recognised that a side effect of these extensions would allow someone to get an almost complete copy of our zone file, which contravenes our policies on data protection.

We are taking a leading role within the IETF to develop alternatives to the area of DNSSEC that causes this problem, by introducing changes that provide the same functionality but protect the contents of the zone file.

DNSSEC will be project for quite some while, however we should have a test bed for tag holders to access during the second quarter of 2005.

#### 3.2 IRIS/CRISP

In much the same way that EPP is an XML based standard for the providing the services the Automaton provides, IRIS is an XML based standard for providing the service WHOIS provides. The current WHOIS output is text based and not very well structured, but with IRIS the information returned is formatted within XML syntax to enable easier parsing by computer programs.

We are working on a test bed for IRIS using the standard domain information interface as well as developing an extended interface that allows access to Nominet-specific information.

We plan to have a full CRISP/IRIS service by the end of the third quarter of 2005, possibly with a test bed during the second quarter.

### 4. ENUM

ENUM is a way of encoding a telephone number as a domain name. This has a number of uses. For example if a company that uses Voice over IP (VoIP) wants to connect their telephone system over the Internet to another company that uses a similar system then they need to know the details of that company in advance. With ENUM the first telephone system will be able to look up the address of the second in the DNS and thereby make the connection.

We are part of the trial group looking at how the ENUM market will work in the UK and as part of this group we are developing technologies to enable us to run an ENUM registry. No decision has yet been made on who will run the ENUM registry for the UK but this is an area of business that we are likely to bid for when the tender is announced.

### 5. Stakeholder Research Programme

#### 5.1 Member and Tag Holder Research

Until now member and tag holder feedback has principally been sought through member lunches and other informal feedback channels. We have had a very good response to these sessions and have picked up a great deal of very useful information. However there are many members and tag holders that cannot attend these sessions and so we are supplementing them with quantitative research to ensure that the themes that emerge are correctly interpreted in terms of their relevance and priority to members.

We are now conducting telephone research of our members and tag holders using an external research firm. The firm will target a representative sample of members and tag holders in order to achieve confidence levels of at least 95% in the results. The survey covers a number of broad headings including market information, customer satisfaction, communications, corporate governance and technical developments.

This research should complete by the end of the fourth quarter of 2004 with a summary of the results made available in the first quarter of 2005.

## 5.2 Registrant Research

We intend to start a rolling programme of registrant research to better understand how this important group of customers perceives us, our staff and our services. This is a group with whom we have significant contact through our direct telephone support service and so we have a great deal of qualitative information available. However the range of registrants is very wide and we need to ensure that we have their views fully covered and that our understanding is on a sound statistical basis.

This research will use a broad range of measures to enable us to track trends over time and properly gauge reactions to new services as they are made available, for example the online services that we provide for registrants to use directly. We will also identify suitable benchmarking opportunities for the key measures to enable us to compare our service delivery with similar organisation.

This research will take place during the first quarter of 2005 with the first results being made available in the same quarter.

## 6. Pre-Nominet Project

This project involves contacting all of the registrants of domains that were registered before the incorporation of Nominet and asking them to sign up to our Terms and Conditions. In total there were approximately 26,000 domain names registered before 1 August 1996, of these we have identified and contacted 68% of registrants and cancelled 12% of the domain names. We have still to contact just over 8,000 registrants.

In response to a recent complaint and feedback from the PAB we are redrafting the letter issued to registrants of pre-Nominet domain names, to include a section that informs registrants that it is cheaper for them to sign up via a tagholder rather than directly with us.

The new letter will go live at the beginning of the first quarter of 2005 and the whole project should be complete by the end of the second quarter of 2005.

## 7. Customer Support System

To date we have relied on a variety of ad hoc methods for tracking customer interaction with our support teams, but we have now completed the first phase of the introduction of a comprehensive customer support system. The new system will enable us to record all support interactions with customers and link those to the details we hold on the register. Currently this means linking by domain, tag or membership number, but as the data restructuring project progresses it will also allow us to link by registrant details.

With the expanding use of this system we will be able to provide even better support. Partly this will be by monitoring response times to a degree not available before now and partly by using the system to identify trends and developing issues, which we can then work on proactively.

The next phase of the implementation is the introduction of change and problem management, with the system feeding into the work of our technical team. This will improve the handling of errors reported to the support teams that then escalate for a technical fix as well as improving the planning and implementation of changes to our systems.

The first phase was completed during the fourth quarter of 2004 and the next phase will be completed by the end of the first quarter of 2005.