

# News from .aero

the domain of aviation

[www.information.aero](http://www.information.aero)

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## Welcome

Welcome to the March 2005 edition of the newsletter that keeps you in the picture on events at .aero – the world's first industry-specific Internet top-level domain.

As we celebrate our third anniversary, we take this opportunity to explore the fundamental attraction of registering with .aero, as well as the extra benefits that are being offered with the help of the community's own Dot Aero Council.

One of those benefits is the potential of using the Domain Name System (DNS) – a cornerstone of the Internet – to enhance industry communications and the value of Voice over Internet (VoIP) services. Last November we ran a workshop for customers, with one of the top Internet experts as our guest, specifically to explore the potential for 'interlining' of communication services using the Internet. We have an abbreviated report here – and a fuller report is available on request via the .aero website – [www.information.aero](http://www.information.aero).

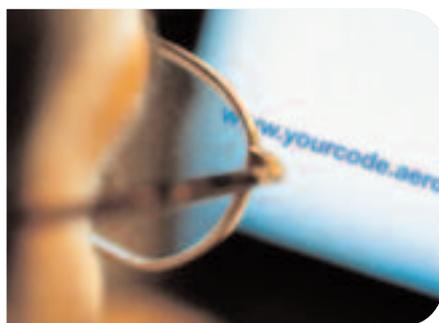
We also offer a couple of tips to help you get more out of your use of the .aero domain – as well as a couple of stories that demonstrate how fast the technology that now dominates our lives is moving. First, there has been a breakthrough that presages the end of the transistor – and then how you can recycle your old mobile phone and produce a sunflower!

The .aero domain belongs to the aviation community. Your domain, your newsletter. So keep in touch and we hope you enjoy reading this edition.

.aero team, SITA

# Maturing nicely – three years of .aero

Those considering registering their .aero domain name generally ask about the additional services available, other than the name itself. Three years after the launch of .aero is perhaps a good time to go back to basics.



for anyone involved in aviation. The value of the branding is ensured through the process of eligibility verification that each applicant has to satisfy. After three years of faultless reliable service, the .aero domain has become a well accepted and exclusive element in the aviation community's branding toolbox.

Using domain names rather than IP addresses to locate services provides greater flexibility when switching suppliers of communication services.

## Domain name registration

First, the .aero domain name can be used almost in the same way as any other domain name. The only exception is that, unlike most other generic domains, there is a policy agreed by all concerned to ensure the domain is always used in the best interests of the community. If, for example, a website offered guidance on breaching customs rules or was set up as a beauty parade for cabin staff, then (a) it would generally be refused at the outset as not being considered a bona fide air transport community operation and (b) if it was a spin-off from a genuine .aero website, SITA, as managers of the domain on behalf of the community, can close off the offending site.

Many users register domain names simply because they want to set up a web site with a clear link to the aviation community. There are a great many names still available in the .aero domain and, being global, the .aero domain provides first-rate additional branding opportunities

## Examples

[www.jpdo.aero](http://www.jpdo.aero)

The website of the Joint Planning and Development Office of the US-Government sponsored 'Next Generation Air Transportation System'.

[www.onair.aero](http://www.onair.aero)

A new company that will enable airlines to equip their aircraft cost effectively with a full suite of personal communications services for passengers.

[www.jetstream.aero](http://www.jetstream.aero)

Providing flight support services and air brokerage.

[www.environment.aero](http://www.environment.aero)

The first global, industry-wide 'Aviation and the Environment Summit 2005' to be held in Geneva in March 2005.

[www.atcmaastricht.aero](http://www.atcmaastricht.aero)

'ATC Maastricht 2005' conference organized by the Air Transport Action Group held in February 2005.

### Simple migration path

Moving to .aero need not be an expensive or difficult choice. Website or e-mail addresses using the .aero domain can and do work in parallel with your existing domain name, allowing for a gradual phasing out of generic addresses in favour of .aero, thus simplifying the migration from your existing domain to .aero.

### The development community

Because .aero is so much more than the provision of a domain name, we have coined a tagline: “innovative Internet-based services built on aviation naming and coding structures.”

The industry has a long history of coding. In the old days every industry professional knew how to send a message to a baggage desk at a given location and given airline. Through .aero, we want to be able to achieve the same, but via the Internet. With the help and guidance of the advisory Dot Aero Council (DAC), we are helping the community progressively build a naming structure and a set of communication standards and technologies, which will allow the community members to communicate easily, and take full advantage of the new media. Unlike other domains, management of the domain – as well as the resources available from .aero now and in the future – are under the control of the community, rather than one organization.

### The technology

DNS, the technology behind .aero, is an important part of the solution. Years of evolution of this technology have important practical implications. One domain name

(say gva.bag.lh.aero) can serve as a single unique identifier for a variety of different services/access methods. The owners of the domain can configure themselves all information relevant to the domain name – how to reach people via VoIP, how to use e-mail, the location of the name server, the Uniform Resource Indicators (URI) for Web service or the public key required for sending an encrypted message. Armed with DNS, there is no need to inform partners about changes in individual addresses (for example when a supplier changes) – this information is automatically distributed by DNS.

This is important: using domain names rather than IP addresses to locate services provides greater flexibility when switching suppliers of communication services (no need to reset the connections with others, just change the domain name records) and eventually allow dynamic virtual private networks (VPNs). Well structured names space allow users/systems to locate systems and services without even the small delay of using a search directory.

Using structured names in DNS offers a double advantage for any size airline, airport or air transport entity. First, as a general rule, domain names can be setup at a highly affordable cost. Second, while you can use a sophisticated application to manage a sophisticated structure, you can also manage a node in DNS an open source application or even as a text file. Thus every ‘node’ in DNS can determine the level of complexity for publishing its own entry in the DNS system.

### Get involved

The .aero domain started with simple coding and predictability for ‘normal’ users. For example, try any airline code with the addition of the postfix .aero – and if the airline uses the code, you will be directed to their site. If they are not yet using the code, you will be directed to a SITA website indicating who is the code user.

However, we are now working with some of the best brains in the business to develop innovative and advanced open standards-based Internet services using the .aero structure – with the objective of helping the industry reduce its costs and enhance its operational effectiveness. We are bringing together interested users to take this further. We have also presented a range of ideas to IATA’s Information Management Council (see feature ‘A new approach to communications’ on page 6).

If you would like to contribute to the future of the air transport community’s own domain, then this is your opportunity: send an e-mail to [aero.enquiries@sita.aero](mailto:aero.enquiries@sita.aero) or go to [www.information.aero](http://www.information.aero) and press the ‘Contact us’ button.

# What is Enum?

One of the building blocks of a future voice over Internet (VoIP) world is called the Enumbing, or Enum, initiative.

Simplistically, it is a means of mapping phone numbers to Internet addresses, in the same way that domain names are mapped via the domain naming system (DNS). It will enable networks to know where you can best be contacted, so re-routing calls as necessary via fixed line, mobile, Web etc. – or even to translate a phone call into a voice message and attach it to an e-mail for forwarding.

The technology is complex, but as complex is how the technological and regulatory intersection of the Internet and the Public Sector Telephone Network (PSTN) is handled – including whether telephone numbers (of which there are already billions in place and which are language neutral) or Internet style addresses (using existing styles of Uniform Resource Indicators, or URIs) will be the optimum medium.

Enum is a protocol defined by the Internet Engineering Task Force (RFC 3761), rooted in a specific public part of the DNS, that is one way of addressing calls that pass from one network service to another. While a number of VoIP public services are already up and running (such as the European-based Skype), there are significant international issues impacting the way regulation is handled between states.

The International Telecommunication Union – the UN body through which governments and the private sector coordinate global telecom networks and services – is working with the IETF to resolve outstanding issues, with a view to producing a recommendation in May 2005.

The benefits of converging voice and data have been apparent for a number of years. Now the technology has well and truly caught up with the concept – with considerable financial and operational benefits available to those who make the move.

More information:

[www.itu.int/osg/spu/enum](http://www.itu.int/osg/spu/enum);  
[www.ietf.org/html.charters/enum-charter.html](http://www.ietf.org/html.charters/enum-charter.html);  
<http://www.itu.int/ITU-T/inr/enum/trials.html>  
(information about enum trials in various countries).

For information on SITA's VoIP services, see [www.sita.aero](http://www.sita.aero).

The benefits of converging voice and data have been apparent for a number of years.



## How to renew your domain name

If you want to find out when your .aero domain name expires, simply go to the **Check Name** database within [www.information.aero](http://www.information.aero) and type your domain name. You will see the expiration date of your domain in the 'Expiration Date' field.

To renew your domain name, request renewal of your domain name directly through your registrar (see [www.information.aero/registrars.php](http://www.information.aero/registrars.php)).



If you cannot remember who is the registrar of your domain name, simply go to the Who-is database and type the domain name you are looking for. Then click on the link in the 'Sponsoring Registrar' field to get details.

Be sure you know when your domain name expires (even Microsoft has missed some domain renewals!). If you miss renewal, the registrars or the registry have the right to DELETE your domain name at any time. However, .aero management provides registrars with an extended period of time to resolve any outstanding cases. When a domain name expires, your registrar has 45 days, after which they must delete all those names they do not wish to renew.

If you need more information about registrations, renewals and transfers, see [www.information.aero](http://www.information.aero).

## The easy way to search for aviation websites

If you're looking for aviation websites, simply type 'site:aero' into the Google search box, or set '.aero' in the Advanced Search function of the Google site. That way you can be sure you avoid non-aviation sites.

## ... and finally

Researchers at the UK's Warwick University have found a novel way to recycle discarded mobile telephones. They have produced a special formulation of a biodegradable polymer that produces a high quality product, but which also biodegrades easily in compost.

The finishing touch is a small transparent window in the phone's cover with an embedded flower seed. The seed can be seen but will not germinate until the phone cover is recycled. For the first prototype, the researchers used dwarf sunflower seeds. So instead of wondering what to do with that out-of-date mobile phone, soon you may just be able to plant it in the garden or in a pot of compost – and watch it flower!

## Who needs transistors?

At the beginning of February, Hewlett Packard announced that its researchers had proven a technology they invented that could replace the transistor as the fundamental building block of computers. Members of the company's Quantum Science Research group claim they are re-inventing the computer at the molecular scale, using nanometer-sized devices that are relatively inexpensive and easy to build

(thousands will fit across the diameter of a human hair!).

Although the company expects transistors to remain in use for several more years, along with conventional silicon circuits, they believe their invention could replace transistors, resulting in computers thousands of times more powerful than those that exist today.

# A new approach to communications

Once again, technology is about to change the way we communicate. We will be able to contact each other via any network or appliance, routing calls via the Internet rather than the fixed line phone network.

Led by Dr Klensin and Marie Zitkova, the .aero manager, the workshop explored how Internet technologies can help create an integrated interline environment. Particular attention was paid to the latest developments in DNS technology – as well as the security considerations of using the public Internet for business applications, the concept of the industry naming structure in the .aero domain and the general potential of the Internet for air transport specific applications.

With the evolution of online technologies, the industry transition to Internet-style solutions is accelerating. Airlines find themselves with increasingly computerized systems for ticketing, itinerary and passenger tracking and baggage processing.

To be effective, all of these systems must deal with each other on an interline basis.

IATA's recently announced Simplifying the Business initiative recognizes the potential of online technologies to achieve lower costs, higher efficiency and improved passenger services. For each initiative, innovative and coordinated use of Internet technologies will be the key to exploiting the full potential of the technology and avoid the associated inefficiencies of systems that grow through 'add-ons'.

## Practical implications

Dr Klensin explained that the Domain Name System (DNS) is an important building block of the Internet. It is a distributed database, which maps structured names to 'things'.

A wide variety of information can be distributed using various records defined in DNS. The records may contain host IP addresses or e-mail server addresses – as well as VoIP addresses, phone numbers, fax numbers, individual e-mail addresses, URIs which identify available services, or even public cryptography keys.

The database is strictly hierarchical, so that administration of each node within the 'tree' can be fully controlled by the 'owner' of each node independently of the actions of others. The information contained in the DNS database itself is publicly available to all users of the network although distinctions can be made between the public Internet and various private networks with regard to what information is available.

These three concepts have important practical implications. The owner of a domain name can configure all information relevant to the domain (such as VoIP, e-mail, host address, URI for web service or public key) without involving a central authority. This information is then automatically distributed by the DNS.

In terms of reliability and security, the Internet is no worse than private networks but requires users to employ a different approach to ensure the same degree of reliability and security.



## Special feature continued...

For example, with private networks, users tend to assume that the presence of a message on the network indicate that it is authentic. That assumption may be less valid as private networks evolve from dedicated wires to shared fibre and virtual network arrangements. With the Internet, the user must take responsibility for end-to-end authentication of all messages and ensure that only certified messages pass through to the application. Cryptography based on public/private keys is the only 100 percent reliable technique, assuming the secret keys are properly managed. Others, such as hiding names, using secret addresses, or restricting access to certain addresses, are generally less effective or suffer from poor scaling.

### Possible applications

A number of business applications that might benefit from DNS technologies and structured domain names were discussed at the workshop.

- Interconnection of VoIP systems between airlines. Domain name holders could configure a VoIP address associated with a given predictable name so that callers can use their VoIP application to place a call. For example gva.dcs.lh.aero zone could contain a VoIP address for Lufthansa's departure control at Geneva Airport.
- One domain name could be used as an identifier for an entire array of services, since multiple records of different types can be associated with one domain name. The same name (such as gva.bag.lh.aero) could be used by different systems to locate a phone number, fax number, e-mail address or web service URI relating to baggage processing in Geneva Airport.

- An e-ticketing application assumes that each airline has a database of all tickets and that each airline using the ticket at different stages updates the source database. Currently, these databases are held at large airlines or in interconnected hubs. Application of a standard naming convention to access these applications could allow more airlines to use independent solutions, while retaining the same 'name' used by other systems.
- There are already DNS applications in place that "parse" RFID values to locate a system that supports data provided by the manufacturer. Baggage management systems may follow the same method of data processing as interline e-ticketing – storing all data relating to a bag in the database of the originating airline. In this scenario, the industry application could use the same technology to parse bag identifiers (RFIDs or barcodes) to locate the database of the originating airline.
- The DNS could be used to distribute public keys needed for secure communication between airline application systems, otherwise a very complex exercise. Details of this concept were presented by .aero to IATA's Information Management Council (IMC) in November 2004.

### The wider picture

The workshop participants supported proposals to use DNS based naming structures, providing the technology is considered in the wider context of industry communications standards and protocols, as well as the deployment of new technologies such as XML.

It was felt important to approach this activity as a development of a framework for intra-industry communications in the IP-enabled world rather than a 'push' for more use of DNS technology. For example, while a majority of airlines have moved to an IP network environment, some airlines continue to rely on legacy networks. So from a community perspective, development or standardization of messaging formats, naming schemes or communication mechanisms should also provide for transition from and translation to Type B. At the same time, planning for the future should avoid the expensive 'two transitions' trap of simply migrating old formats and ways of doing things to the new environment, only to be faced with redesigning to take advantage of the other special properties and strengths of the Internet later.

**Note: A fuller version of this report is available from [aero.enquiries@sita.aero](mailto:aero.enquiries@sita.aero).**

**"The idea behind .aero is to facilitate industry transition from a single centralized network to an Internet environment by developing a predictable naming structure for industry systems to communicate with each other."** Marie Zitkova, .aero Business Manager

### Breaking news

17 March 2005 – is the launch date of a brighter and bolder .aero information website.

As the .aero community initiative gains momentum, we have more and more information to share. We would also like to make the path to registering a new .aero name simple and fast by linking prospective new registrants with one of the five officially recognized .aero registrars. To facilitate this we've undertaken a revision of our website, where you'll find new FAQs to help with the registration process.

Our .aero user directory has been revamped, this directory lists all registered .aero domain names – whom they belong to and links to the home sites.

If you already have a .aero registered site check to see if it is included in our directory, if not, request to have your site included today by completing the request form on the .aero directory page of our web site. Plus we will have regular updates in our development section and news of industry events.

Take time out and visit us today at [www.information.aero](http://www.information.aero).



### Industry events

You can meet members of the .aero team at a number of forthcoming events including:

#### **Aviation & Environment Summit – 17-18 March 2005, Geneva, Switzerland**

The first global, industry-wide event on aviation and the environment, bringing together all air transport industry players to discuss major environmental challenges impacting aviation. The Summit will provide a forum to present and debate current aviation and environment-related issues and to establish common goals to advance the industry's commitment towards environmental progress.

For more information visit: [www.environment.aero](http://www.environment.aero)

#### **EBACE2005 – 18-20 May 2005, Geneva, Switzerland**

The 5th Annual European Business Aviation Convention & Exhibition remains the only Exhibition of this size to focus totally on business aviation in Europe. EBACE2004, registered a record 6,487 Attendees, it also

featured 247 Exhibitors occupying a record The Static Display on Geneva International Airport featured a total of 36 business aircraft.

For more information visit: [www.ebase.aero](http://www.ebase.aero)

#### **The First Annual Summit on China Airports – 4-6 April 2005, Shanghai, China**

Organized by Airports Council International (ACI) and JF Pearson, this event will be a unique opportunity to learn about updated policies, regulations and investment opportunities in the China airports industry – directly from the regulators. The summit will provide the platform for local and international airport industry executives, consultants, technology and equipment providers, and solution providers to examine and contribute to the development of China's airport industry.

For more information visit: [www.jfpearson.com/airport\\_overview.htm](http://www.jfpearson.com/airport_overview.htm)

For more information contact [aero.enquiries@sita.aero](mailto:aero.enquiries@sita.aero)

Online information and late breaking news are available at [www.information.aero](http://www.information.aero)  
e-mail enquiries to [aero.enquiries@sita.aero](mailto:aero.enquiries@sita.aero)

This newsletter is issued by SITA, the Sponsor of the .aero Top Level Domain. SITA also operates the official .aero web site [www.information.aero](http://www.information.aero) – providing information about domain registrations, policies and procedures and new developments in the .aero domain.

If you would like to comment on any of the articles in this issue or you would like more information, please contact our editor, Paola Piacentini, at [aero.enquiries@sita.aero](mailto:aero.enquiries@sita.aero)

#### **News from.aero – the domain of aviation**

For further information, please contact SITA:

**Global Headquarters**  
26 Chemin de Joinville, B.P. 31, 1216 Cointrin,  
Geneva, Switzerland  
tel: +41 22 747 6000 fax: +41 22 747 6133  
e-mail: [aero.enquiries@sita.aero](mailto:aero.enquiries@sita.aero)

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**Publisher:** Marie Zitkova  
**Web Publisher:** Elena Vladkova  
**Managing Editor:** Paola Piacentini  
**Editorial:** Gerald Oliver  
**Production Editor:** Amber Harrison

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