auDA Competition Model Advisory Panel

Final Report

Competition Model for the .au Domain Space

June 2001

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1. INTRODUCTION

1.1 Root of authority for .au

1.1.1   The global domain name system (DNS) is a single-rooted hierarchy of domain names developed by the Internet community and documented in Internet Engineering Task Force (IETF) standard Request for Comment (RFC) 1591. The root of the hierarchy is currently managed under the authority of the United States Department of Commerce (DoC), which has delegated most of the policy functions associated with the root of this hierarchy to the Internet Corporation for Assigned Names and Numbers (ICANN), a not-for-profit US-based corporation. The .au domain is one of over 200 country code top level domains (ccTLDs) at the top level of the hierarchy below the root "." in the global DNS. Most ccTLDs have been delegated by the Internet Assigned Numbers Authority (IANA) (note the functions of IANA are now performed by ICANN under contract to the DoC), to an individual who is responsible for managing the domain name policies and procedures for that ccTLD.

1.1.2   Robert Elz is the current delegate for .au. He created a number of .au second level domains (2LDs) and sub-delegated some of them to other individuals. There are some significant differences between the 2LDs, largely relating to their purpose and management. The term 'open' is commonly used to describe those 2LDs that are basically open to all users (asn.au, com.au, conf.au, id.au, info.au, net.au and org.au), and 'closed' describes those 2LDs with defined communities of interest (csiro.au, edu.au, gov.au).

1.1.3   In 1999, a not-for-profit organisation called .au Domain Administration Ltd (auDA) was established by the Australian Internet community with the goal of becoming the industry self-regulatory body for administering the .au ccTLD and its associated sub-domains, for the benefit of the Australian community. auDA has been formally endorsed by the Australian Government as the appropriate entity to hold the delegation of authority for administration of the .au domain space.[1] For the purposes of this report it is assumed that auDA will obtain such rights as are required to administer the .au domain.

1.1.4   In 2000, the Federal Parliament amended the *Telecommunications Act 1997* and the *Australian Communications Authority (ACA) Act 1997* to give the ACA and the Australian Competition and Consumer Commission (ACCC) reserve powers in relation to electronic addressing (which includes domain name services) in Australia. The Federal Government favours a self-regulatory approach to the management of domain names. The reserve powers are intended to provide appropriate methods of intervention in the event that self-regulation proves ineffective. Under the ACA Act, the Minister for Communications, Information Technology and the Arts may direct the ACA to assume responsibility for the .au domain. This power is intended to be used only in exceptional circumstances. Under the Telecommunications Act, if the ACA or ACCC considered that the .au domain was being managed in an unsatisfactory way (eg. not promoting adequate levels of competition or in relation to consumer protection matters), then the ACA could declare a "manager of electronic addressing" so that either the ACA or the ACCC could then issue legally binding directions to rectify these problems.

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[1] See http://www.auda.org.au/docs/govt-endorsed.html

1.2 auDA Competition Model Advisory Panel

1.2.1   The board of auDA established a Competition Model Advisory Panel in September 2000, following a public call for participants that elicited over 50 nominations. A total of 30 Panel members were selected on the basis of relevant skills and experience, and ability to represent stakeholder views. The auDA Board appointed George Michaelson, Manager Technical Services, APNIC and David Lieberman, Special Counsel, Blake Dawson Waldron, Co-Chairs of the Panel.

1.2.2   The Panel's Terms of Reference and membership are at <u>Appendices 1</u> and <u>2</u>. The Panel held eight meetings, the first on 27 September 2000 and the last on 15 June 2001. On average, Panel meetings were attended by 10 members, together with 2-3 people participating via teleconference. Panel members used the closed mail list for discussion and document revision between meetings.

1.2.3   The Panel has undertaken an open and transparent process. Minutes from all Panel meetings are available on the auDA website, along with initial working papers.[2] The Panel Co-Chairs have provided progress reports at every auDA Board meeting.

1.2.4   In December 2000, the Panel released its Stage 1 and 2 reports, which review the current domain name services markets in Australia and overseas.[3]

1.2.5   The Panel released its first public consultation report on 16 February 2001, for a 4 week consultation period.[4] The Panel received 14 submissions, available on the auDA website.[5] The Panel released its second public consultation report on 11 May 2001, also for a 4 week consultation period.[6] The Panel received 12 submissions, available on the auDA website.[7] A public consultation forum was held during the ICANN meetings in Melbourne on 12 March 2001, with an attendance of approximately 60 people.[8]

1.2.6   The Panel was pleased to note the number of substantive, well-considered responses to its public reports. The Panel has considered all comments in formulating and refining its final recommendations. The Panel has followed the auDA Advisory Panel Procedures version 2.3[9] as closely as practicable, in particular the requirement to work towards consensus. The recommendations in this report have the consensus support of the Panel.

1.2.7   In its consideration of the competition model, the Panel has been careful to address the balance expressed in the Terms of Reference between the likely benefits from the promotion of competition and other public benefits which may justify modifications to competition policy in particular areas. The Panel has also been mindful of the relevant legislation designed to protect or promote competition, particularly the

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[2] http://www.auda.org.au/panel/competition/papers/
[3] http://www.auda.org.au/panel/competition/papers/
[4] http://www.auda.org.au/panel/competition/papers/publicreport.html or http://www.auda.org.au/panel/competition/papers/publicreport.pdf
[5] http://www.auda.org.au/panel/competition/submissions.html
[6] http://www.auda.org.au/panel/competition/papers/publicreport2.html or http://www.auda.org.au/panel/competition/papers/publicreport2.pdf
[7] http://www.auda.org.au/panel/competition/submissions.html
[8] http://www.auda.org.au/docs/public-forum-report.html
[9] http://www.auda.org.au/panel23.html

Trade Practices Act 1974 and the Telecommunications Act. This report does not include an exhaustive analysis of these laws. However, the Panel is confident that the proposals it has developed will encourage behaviours consistent with the legislative framework.

1.2.8   This report addresses Stages 3 and 4 of the Panel's Terms of Reference, which require the Panel to recommend a competition model for .au, and provide a strategy for the implementation of the model. The Panel's main recommendations are highlighted in boxes at the start of each section, for ease of reference. However, the Panel urges that the report be considered **in its entirety**, and that the highlighted recommendations not be read in isolation from the explanatory text. In particular, the Panel draws the reader's attention to the additional detail provided at Attachments B, C and D of the report with regard to the tender process, technical requirements and consumer safeguards.

1.2.9   The Panel recommends that the auDA Board publicly release this report as soon as possible, in the interests of openness and transparency.

2. COMPETITION MODEL

2.1 Five levels of activity

2.1.1 The Panel has identified five levels of activity in the domain name services industry:
1. Policy Authority – determines the domain name eligibility and allocation rules for a given domain, and also performs governance, regulatory and enforcement functions
2. Registry – maintains master database for a level of the domain name hierarchy, provides the corresponding public information service and maintains the corresponding authoritative DNS nameserver, and provides customer service to registrars
3. Registrar – processes data on behalf of a registrant or reseller into a registry, and provides customer service to resellers or registrants
4. Reseller – sells domain name services and provides customer service to registrants, and uses a registrar(s) to provide back-end technical domain name services (does not interact with the registry)
5. Registrant – encompasses domain name licence holders, domain name licence applicants and their agents.

2.1.2 The recommended competition model outlined in this section defines the functions and behaviours of each level of activity, and how the levels interact with each other. This is illustrated in the diagram at Attachment A.

2.2 Policy Authority

> **Recommendation 2.2:**
> ❑ **Only auDA will have authority for setting domain name policy for .au.**
> ❑ **auDA may delegate its policy authority for a 2LD under .au to another body; in which case, that body shall be subject to appropriate accountability mechanisms including the submission to auDA of an annual report that shall be published.**
> ❑ **There should be a clear separation of policy and operations.**
> ❑ **auDA is accountable to its members, and subject to legislative and judicial review.**
> ❑ **Reviews of the self-regulatory regime should be periodic, independent and the results shall be published.**

2.2.1 Public submissions to the Panel demonstrated support for the proposal that auDA be the sole body with authority and responsibility for setting domain name policy for the .au domain. There was also support for the proposal that auDA may delegate its policy authority for a 2LD to another body; this is most likely to happen in the case of the closed 2LDs, whose administrators have a stated preference for retaining policy autonomy (subject to ratification by auDA). The Panel recommends that where auDA delegates policy authority, it shall ensure that appropriate accountability mechanisms are established and maintained in the public interest, including the submission to auDA of an annual report that shall be published.

2.2.2   The Panel is of the strong view that there is a need for auDA to maintain clear separation of policy and operations. Where it has delegated authority to another body, as in the case of closed 2LDs, auDA should encourage that body to also maintain separation of policy and operations. For this reason, the Panel considers that it would be undesirable for auDA to also operate as a registry or registrar, as this would compromise, or be seen to compromise, auDA's ability to act as an independent regulator of the industry.

2.2.3   The Panel considers that monitoring and review of industry self-regulation are important to ensure that the regulatory regime is still relevant to addressing specific problems and improving market outcomes. The Panel notes that reviews and annual reporting by auDA or auDA Advisory Panels are appropriate mechanisms that assist in providing measures of transparency and accountability. The Panel recommends that reviews of the self-regulatory regime should be periodic, independent and the results made publicly available. The Panel notes the existence of the following independent review mechanisms :

❑   auDA is accountable to its members. If auDA breached its own Constitution or otherwise mismanaged the .au domain, its members could, for example, elect a new board of directors at the annual general meeting.
❑   The ACA and the ACCC have reserve powers under the Telecommunications Act to declare auDA the "manager of electronic addressing" and give it directions. In extreme circumstances, the ACA could itself assume responsibility for management of the .au domain.
❑   Furthermore, it would be possible for auDA to be held accountable for its actions by way of litigation.

2.3 Registry

Recommendation 2.3:
❑   *auDA will adopt a competition model that allows for multiple registries.*
❑   *Provision of registry services under a licence agreement from auDA will be contestable, through a periodic open tender process to be administered by auDA.*
❑   *Closed 2LDs may elect to be included in the tender process; if they choose to opt-out, then they must provide a minimum set of registry services to ensure they can function as part of the unitary DNS and meet public interest requirements.*
❑   *The registry operator(s) will provide the authoritative nameserver, generate zone files and maintain public (WHOIS) information for their own 2LD(s).*
❑   *Registry information will be published in a central data register to be maintained by auDA for the purposes of providing a centralised WHOIS service, by replicating the registry data in a central repository.*
❑   *The registry operator(s) must provide customer service to all registrars.*
❑   *The registry operator(s) will provide registrars with an electronic interface to enter and update records in the registry.*
❑   *The registry operator(s) will perform final checks on domain name registrations to maintain the integrity and stability of the registry database.*
❑   *The registry operator(s) shall be subject to appropriate accountability mechanisms, including the submission of reports to auDA.*

> ❑ ***auDA will set minimum technical standards, data protocols, security and service level requirements for the registry operator(s), including escrow requirements for data and registry software.***
> ❑ ***auDA will develop a disaster recovery plan, including back up plans in the event of breach by the registry, so that it is in a position to protect the .au domain and related infrastructure.***
> ❑ ***auDA will be the technical and administrative contact for making changes to DNS records for .au and the 2LDs within .au (eg. com.au).***
> ❑ ***A registry operator may not also operate as a registrar unless there is a clear and effective separation of the two business operations.***

2.3.1   A registry provides two key services to the Internet community: it provides a public information service (known as WHOIS) so that users can find the domain name licence holder corresponding to a particular domain name; and it provides the authoritative nameserver for a particular level of hierarchy in the DNS so that an Internet end user's computer can translate a domain name to a physical Internet address for online access. It also provides data in the form of a 'zone file' for other secondary nameservers.

2.3.2   In its first report, the Panel put forward two options at the registry level – a single registry on the one hand, or multiple registries on the other. The multiple registries model is premised on the notion that there will be better incentive for innovation and more choice for registrants or organisations sponsoring a new 2LD, while the single registry model asserts that economies and efficiencies from a single operator outweigh the benefits of innovation and competition at this level. Public submissions to the report did not demonstrate unequivocal support for either model.

2.3.3   In its second report, the Panel put forward a compromise option: that auDA adopt a competition model that allows for multiple registries however, as a first iteration of the model, auDA should tender all the existing open 2LDs (asn.au, com.au, conf.au, id.au, info.au, net.au and org.au) to a single registry operator.

2.3.4   The Panel considered that this compromise option would:
❑ provide an acceptable balance between innovation and efficiency;
❑ test the registry operator market through the initial single tender, before going to multiple tenders;
❑ enable initial uniform service level agreements (SLAs) to be imposed across all (open) 2LDs via a single registry operator, that would serve as a benchmark for future multiple registry operators;
❑ allow time for the industry and consumers to adjust to a multiple registrar environment, before introducing multiple registry operators; and
❑ address public interest concerns regarding efficiency of resources and duplication of infrastructure.

2.3.5   Public comments on the Panel's second report suggested that the proposal to tender all open 2LDs together in a single registry would be too restrictive and may not result in efficiency gains. Moreover, the Panel notes concerns that the initial establishment of a single registry for all open 2LDs could entrench monopoly power and limit the potential for future entry of new registry operators. Such factors could also have

a detrimental impact on competition at registrar level and lead to a reduction in national benefit.

2.3.6   In light of these comments, the Panel considers that auDA should allow the market to determine the number of 2LD registries in the .au domain by ensuring that the tender process does not exclude any type of proposal. Proposals may be for all, some or one of the open 2LD registries. Proposals may be submitted by for-profit or not-for-profit entities, single firms or consortia, commercial operators or community-interest groups. auDA must ensure full and adequate coverage of all open 2LDs. Moreover, auDA must ensure that public benefit outcomes are preserved by evaluating all tenders against the same minimum technical and consumer safeguard criteria, and choosing the tender that offers the 'best value for money'. The Panel recommends that concerns noted in paragraph 2.3.5 about monopoly power are given due consideration by auDA in evaluating registry tenders.

2.3.7   The Panel notes that auDA's Name Policy Advisory Panel will report on the possible creation of a number of new 2LDs in the .au domain. Under the recommended competition model, selection of the provider of registry services for new 2LDs would be by an open and competitive public tender process conducted by auDA.

Tender process
2.3.8   The Panel recommends that an open and competitive tender be called for the provision of specified registry services under a licence agreement from auDA that specifies the maximum prices the registry operator will charge registrars and also the service levels which will be provided to registrars. Open tendering will allow access to world-class expertise and methodologies in the delivery of registry services, to achieve the best possible value for each registrant dollar spent in delivering those services.

2.3.9   The licence period should be long enough to enable the winning tenderer to implement its business strategy and achieve a reasonable return on investment. The Panel suggests a period of 3-5 years. However, the appropriate licence period should become apparent in the light of business plans submitted by tenderers.

2.3.10 The Panel notes that the process for selection of the registry operator(s) could be single or multi-staged. It may be appropriate to hold a two-stage process comprising a request for expressions of interest (REOI) followed by a request for tender (RFT). A REOI may be invited internationally at an early stage to establish the extent of interest in the provision of registry services. The REOI stage would establish a register of respondents, from which a short list could be invited to submit tenders at the RFT stage. Responses to the REOI may also provide a basis for refining tender requirements for the RFT stage.

2.3.11 In evaluating responses to these stages, auDA should have regard to the following criteria, as appropriate:
❑   compliance with technical requirements, consumer safeguards and any other requirements;
❑   conflict of interest considerations;
❑   price;
❑   business plans and financial viability;
❑   organisation and management capability and capacity;
❑   past performance;

□ strategy for transition-in of registry services;
□ strategy for transition-out of registry services to another registry operator at the expiration or termination of the licence agreement; and
□ extent to which competition in the provision of DNS services is enhanced.

2.3.12 Probity of the tender process is important to:
□ ensure objective, fair and consistent treatment and assessment of tenderers and their tenders during the competitive tendering process;
□ promote industry and consumer confidence in the process; and
□ effectively manage auDA's risk.
Accordingly, those involved in the tender selection, evaluation and negotiation processes should observe the highest ethical standards necessary to ensure confidence in the integrity and good reputation of the regulator and the industry. To this end, probity protocols relating to the tender process should be developed, having regard to best practice. Protocols would normally relate to confidentiality and privacy obligations, real or apparent conflicts of interest, avoidance of conflicts of interest, disclosure of interests, and responsibilities for and conduct of tender process. Those involved in selection, evaluation and negotiation processes should observe such protocols and may sign deeds of undertaking.

2.3.13 The Panel suggests that auDA establish a committee to manage tender processes, to ensure that no one person controls outcomes and that all significant decisions and recommendations are subject to review. auDA may wish to consider including representatives from industry and consumer groups on the committee. The Panel encourages auDA to consult with key stakeholders regarding the proposed tender objectives and strategy, selection criteria, technical and performance specifications, consumer safeguards and tender process timetable including key milestones.

2.3.14 More detail is provided in the Tender Process paper at Attachment B.

Registry ownership/control considerations
2.3.15 The Panel does not consider it appropriate for auDA to restrict the tender to Australian-owned entities, nor is it appropriate for auDA to include any foreign ownership and control criteria in the tender. The Panel notes that registry investment proposals by foreign interests may be subject to the Federal Government's foreign investment policy.

2.3.16 The Panel advises that the following restrictions be placed on entities that will provide registry services:
□ a successful tenderer be required to operate the registry through an Australian registered company, and must possess and maintain a physical address in Australia;
□ the tender documents should explicitly state that the successful tenderer must be bound by Australian laws (Commonwealth, State and Territory);
□ auDA will have the right, and may assign the right, to use all registry software applications (eg. in the event of breach of contract by the registry operator); and
□ registry servers and backups must be located in Australia.

Funding considerations
2.3.17 As discussed in section 2.7 of this report, the Panel recommends a funding model for auDA based primarily, but not exclusively, on a levy on domain name registrations and renewals. The registry operator(s) will be required to pay an annual

licence fee, and collect a per domain name levy for auDA. The Panel recommends that the RFT invite tenderers to submit bids which specify a model for charging registrars, which may include both a fixed and a volume related component.

2.3.18 The Panel recommends that auDA ensure that the registry licence agreement allows auDA to adjust the fees charged by the registry operator to registrars taking into account such factors as inflation (eg. consumer price index (CPI)), expected productivity gains (CPI - x, where x>0), risk adjustment, rate of return on registrar investment, and/or the number of domain names under management. The Panel also recommends that the terms of the registry licence agreement enable auDA to vary the licence fees and per domain name levy, in accordance with the auDA budget as agreed in an open, publicly accountable process.

2.3.19 The Panel considered the proposal put forward in some public submissions, that instead of receiving fees from the registry operator, auDA should be funded by the registrars and outsource the registry in the same way that AUNIC is currently outsourced. A majority of the Panel agreed that this arrangement would be entirely contrary to the principle of separation of policy and operations asserted in section 2.2, as auDA would in effect be the registry operator as well as the regulator. However, the tender process, subject to compliance with the Trade Practices Act, would allow an industry group to submit a proposal to operate the registry under a similar model that did not involve auDA acting in an operational role.

Regulatory power

2.3.20 The Panel notes that the issue of regulatory power is important, and therefore the licence agreement needs to provide auDA with sufficient control over registry functions and wholesale price of registry functions to provide effective regulation, as well as control over licence fees and per domain name levies. In negotiating the licence agreement, auDA should seek to maximise its leverage and flexibility to enforce performance covenants entered into by a registry operator under the agreement – by using a combination of regulatory/commercial penalties (including performance guarantee bonds held by auDA) or incentives. The agreement should ensure that any provisions for excusable events (if appropriate) are clearly defined so that the rights and obligations of both auDA and the registry operator are understood. For reasons of accountability and transparency, the licence agreement should be published.

2.3.21 Importantly, auDA must have the ability to resume registry service if necessary. Continuous .au domain name service is essential in at least the following events:
❑   a registry business collapses;
❑   a registry operator fails to maintain correct DNS operation;
❑   during handover from incumbent to designate registry operator.
The Panel recommends that auDA be the technical and administrative contact for making changes to DNS records for .au and the 2LDs within .au (eg. com.au). auDA should choose a set of standard names for the nameservers for .au (eg. auroota, aurootb, aurootc, etc) and the 2LDs (eg. comauroota, comaurootb, comaurootc, etc). In this way, if auDA needs to regain control of a nameserver it can directly control changes to the relevant zonefiles and ensure that organisations do not have to update their records with different names of nameservers.

2.3.22 The Panel also recommends that auDA impose electronic data escrow requirements on registry operator(s), both for consumer protection and DNS integrity

reasons. In addition, the registry operator should be required to store a copy of the registry software in escrow (including arrangements for auDA to license third party software used by the registry), so that auDA is able to resume service if necessary. Data and software held in escrow must remain current and be subject to independent audit.

2.3.23 The Panel recommends that auDA require the registry operator(s) to develop and implement an auDA-approved, full business continuity plan covering disaster recovery sites with regular disaster recovery testing. The Panel also recommends that auDA develop and test its own disaster recovery plan so that it is in a position to protect the .au domain and related infrastructure, including against any failure of a registry. The Panel suggests that auDA consult the Commonwealth's E-Security Information Group regarding these plans.

2.3.24 To ensure a basic level of interoperability and adequate consumer safeguards, the Panel recommends that auDA set minimum technical standards, data protocols and service levels for the registry that comply with international industry standards; see the Technical Requirements paper at Attachment C for more detail. These would be foreshadowed in the tender documents, and then finalised in negotiation with the winning tenderer.

Registry function and services
2.3.25 The Panel recommends that the registry operator(s) replicate the registry data in a central register to be maintained by auDA for the purposes of providing a centralised WHOIS service. The Panel suggests that, at least during transition to competition, it would be sensible to use AUNIC as the central WHOIS service. The Panel notes that WHOIS data is not proprietary information and should be held by auDA in trust for the Australian public. auDA's agreements with registry operator(s) and registrars should affirm this principle. The Panel suggests that the data provided in the WHOIS service should be verified by registrars at time of registration for consumer protection, and the data should be checked on a six monthly basis.

2.3.26 The Panel considers that the WHOIS service is an essential feature of the DNS, as it allows users to find out information about the holder of a domain name. This is especially important in the commercial domains, for consumer protection reasons (eg. to trace the owner of a website that contains false and misleading information). The Panel notes that the requirement to provide WHOIS information in commercial domains is commensurate with disclosure requirements on businesses in the offline world. At the same time, the Panel is aware that domain name registrants may have concerns about the privacy of their personal information. The Panel considers it may be desirable to differentiate between 2LDs, so that the WHOIS data set for commercial 2LDs contains more information than the WHOIS data set in personal 2LDs. For example, it may not be appropriate to require domain name registrants in an individual domain such as id.au to provide administrative and technical contact information. The Panel considers that an opt-in approach to the provision of WHOIS information in personal domains may be appropriate.

2.3.27 To address privacy concerns, the Panel suggests that bulk access to WHOIS information should be restricted to a more limited set of data (eg. no personal contact details), and must be authorised by auDA with appropriate conditions of use (eg. not to be used for sending unsolicited postal mail, faxes or email).

2.3.28 The Panel recommends that the registry operator(s) provide registrars with an electronic interface to the registry using an international industry standard protocol to add new domain records, update domain name registrant contact details, update nameserver information (delegation and re-delegation), transfer domain name licences between registrants, transfer domain names between responsible registrars, renew or de-register domain names. The WHOIS data in the registry will provide the name of the registrar responsible for maintaining the record.

2.3.29 The Panel also recommends that the registry operator(s) be responsible for performing final checks on domain name registrations to maintain the integrity and stability of the registry database. These checks would include checking that the domain name does not already exist, checking the domain name against a defined list of reserved words (eg. objectionable words) and checking the character set of the domain name. The Panel's view is that these checks would be automatable and have a negligible per domain name cost. In the case of non-objective policy rules (see section 2.4), the registry should confirm that the independent body has given approval (eg. via an automated check of a digital signature). The registry should report to auDA on the numbers of domain names that fail integrity checks submitted by each registrar to assist auDA in regulating the performance of registrars.

2.3.30 The Panel recommends that a registry operator may not also operate as a registrar unless there is a clear and effective separation of the two business operations, to ensure that competing registrars have fair and equal access to the registry. As noted in paragraph 2.3.11, known and potential conflicts of interest should be taken into account in evaluating responses to REOIs and RFTs. Accounting separation is necessary, but not sufficient. The usual ring-fencing arrangements could be imposed (eg. no common staff, regular audits, etc), however other measures may be necessary to ensure competing registrars have access to registry services on an equivalent basis to the registry's own operations. For example, it may be necessary for the registry and registrar businesses to be separate legal entities, with appropriate monopoly accountability mechanisms in registry constituent documents. These mechanisms should be based on existing access models (such as telecommunications) or on incentive based models which allow vertical integration once certain guarantees are in place. Alternatively, the 'misuse of market power' provisions in the Trade Practices Act may be sufficient. Such arrangements may create additional costs by increasing the complexity of regulation and requirements of auditing.

2.3.31 The Panel considers that a registry operator may be permitted to act as a registrar of last resort in the event that no registrar is offering service for a particular 2LD (subject to conditions outlined in 2.3.30). In the event that a registrar suddenly ceases to operate, other registrars should be required to offer service to existing registrants. The Panel considers it would be inappropriate for auDA to act as registrar of last resort, as this would be contrary to the principle of separation of policy and operations and may compromise auDA's role as independent regulator of the industry.

2.3.32 More detail on registry functions and services is provided in the Technical Requirements paper at Attachment C.

2.4 Registrars

Recommendation 2.4:
- ❑ *Provision of registrar services will be contestable, through an accreditation process to be administered by auDA.*
- ❑ *Registrars will provide customer sales and support services either directly to registrants or through their resellers.*
- ❑ *Registrars will have rights of access to all 2LDs (with the possible exception of the closed 2LDs).*
- ❑ *Registrars will perform policy compliance checks, with non-objective policy requiring approval by an independent body accountable to auDA.*
- ❑ *In closed 2LDs with only one registrar, the registrar may perform all policy compliance functions.*
- ❑ *auDA will impose minimum conditions on registrars, focused mainly on ensuring adequate consumer safeguards, such as privacy of personal information.*
- ❑ *Registrars will develop and adhere to an industry code of practice to deal with issues such as transfer of registrants and complaints-handling.*
- ❑ *Registrars will be subject to appropriate accountability mechanisms, including the submission of regular reports to auDA.*

2.4.1   Domain name registrars provide customer sales and technical support services, including billing and renewals, and update the registry database to include new domain names and associated registry data, and manage modifications to data associated with existing domain names. Registrars may either provide wholesale technical services to resellers, or provide retail services direct to registrants. Some registrars do both. At the wholesale level, registrars provide a range of interfaces to resellers, ranging from electronic interfaces with advanced protocols, to simple fax or telephone interfaces. In computing terms, the registry provides the instruction set for the underlying registry, and the registrars provide resellers with a choice of operating systems or applications to use for accessing the registry. This allows levels of innovation for registrars to customise systems for particular resellers. At the wholesale level, registrars typically also provide resellers with access to a range of different domain name registries on an international basis.

Policy compliance checks
2.4.2   The Panel recommends that registrars be responsible for performing all objective policy compliance checks, to ensure that they offer an adequate customer service to registrants or resellers, and provide a level of quality control. Although it is expected that most registrars will automate their policy compliance procedures, there is no requirement that they do so. Registrars that consistently fail to perform compliance checks correctly should risk financial penalties and/or losing their accreditation.

2.4.3   The Panel recommends that compliance checks for non-objective policy rules be approved by an independent body before a domain name is submitted to the registry. Domain name applications requiring approval would be referred to the independent body by the relevant registrar; the independent body would not have direct contact with registrants. The Panel considers this mechanism necessary in order to maintain the high integrity of the .au domain space and help prevent undesirable practices such as cybersquatting. Furthermore, there are significant economies and other benefits from

such compliance checking being undertaken by a single independent body. Notably, the independent body would ensure fairer, more equitable and consistent application of domain name policy rules. The body must be independent from the registry operator(s) and registrars, as they both have a financial interest in accepting registrations. The independent body must be adequately resourced to enable it to perform this critical function. It is suggested that individual auDA staff might perform the function, or alternatively auDA could establish an independent body comprised of representatives from the registry and registrar sectors of the industry and a representative from the consumer sector.

2.4.4   The Panel notes that the independent body should be subject to defined service levels (such as a minimum 2 day turn around, with an expedited turn around possible for a higher fee). Registrants should not experience a lower level of service than currently available for com.au registrants, as a result of any need for independent human scrutiny. The cost of submitting a domain name application to the independent body would be borne by the registrar and be recoverable from registrants. This would have cost and timing implications for domain name registration service; however, it would protect registrars from liability in the event of a dispute by a registrant, and would also guard against registrar-shopping by registrants to obtain 'soft' policy compliance checking. The Panel notes that if a closed 2LD chose to have only one registrar for that domain, there would be no reason not to have that registrar carry out all policy compliance checks, given that forum-shopping issues would not arise.

Accreditation
2.4.5   The Panel recommends that auDA perform accreditation of registrars. As noted in section 2.7 of this report, auDA may charge an accreditation fee that reflects the cost of the accreditation process. The accreditation process will require the satisfactory completion of a test of the registrar's interface to a test registry system. This test will confirm that the potential registrar has correctly implemented the registry protocol, and also confirm that the registrar correctly applies policy compliance checks to a selection of legal and illegal domain names. The Panel recommends that auDA address the following matters in formulating its accreditation criteria:
❑   organisational and managerial capability and financial capacity;
❑   ability to interpret domain name policy and correctly apply policy compliance checks;
❑   ability to interface with the registry using specified protocols;
❑   adequate customer support services, including an internal complaints-handling mechanism;
❑   adequate billing system;
❑   compliance with data escrow requirements;
❑   need for law enforcement background checks;
❑   management of reseller arrangements; and
❑   sign on to the self-regulatory regime, including auDA's dispute resolution policy.

2.4.6   The Panel recognises that the accreditation process must achieve a balance between on the one hand preserving the public interest in the DNS by ensuring a high quality of service, and on the other hand facilitating the entrance of new players by ensuring the barriers to entry are not too high.

2.4.7   The Panel recommends that accredited registrars have rights of access to all 2LDs, however, registrars would not necessarily choose to operate in all 2LDs. In the event that no registrars choose to operate in a particular 2LD, auDA may need to

authorise the registry to act as a registrar for the particular 2LD (see paragraph 2.3.31). In the event that a registrar suddenly ceased to operate, other registrars should be required to offer service to existing registrants. The Panel notes that some closed 2LD administrators may prefer to use a single registrar; this would have to be agreed between the closed 2LD administrator and auDA.

2.4.8   In Section 2.7 of this report, the Panel recommends that accredited registrars pay auDA an annual licence fee plus a per domain name registration fee (or alternatively the licence fee could vary according to bands of number of domain names under management, eg under 1,000, 1,000-5,000, 5,000-10,000, 10,000-20,000, above 20,000). A sliding scale of registrar licence fees ensures that both small and large registrars can pay a fee that is in proportion to the size of their operation. The registry operator(s) can provide auDA with the number of domain names registered by each registrar to allow the size of licence fee to be determined. The annual licence fee would contribute to auDA's costs in regulating competition amongst registrars, and ensuring compliance against the registrar licence agreement.

Industry code of practice
2.4.9   The Panel recommends that auDA impose some minimum conditions on accredited registrars, focused mainly on consumer protection issues, such as protection of personal information. The Panel also recommends that registrars and consumer representatives develop an industry code of practice to set standards for consumer protection covering such matters as minimum levels of disclosure, handling of registration fees paid in advance, transfer of registrants between registrars, handling of disputes between registrars and registrants and credit management. This code of practice should be approved by auDA, with adherence to be imposed as a licence condition for all registrars. The Panel notes that some registrars may also be carriage service providers as defined under the Telecommunications Act, in which case their customers will be entitled to protection under the telecommunications legislation and the codes developed by the Australian Communications Industry Forum (ACIF). The Panel notes the potential for consumer confusion and the impact on competitive neutrality if the auDA code of practice were not aligned with other relevant codes, especially the ACIF codes. The Panel recommends that auDA use the ACIF code development process to inform its own work in this area, and that the ACA's assistance should be sought to identify ACIF codes that are relevant to the domain name industry.

2.4.10 The Panel recommends that auDA commence planning of the code development process as early as possible, as part of the implementation strategy (see section 3). The Panel suggests that auDA convene a working group of industry and consumer representatives to initiate code development. Considering the large number of diverse participants within the domain name services industry, the Panel notes that there may be difficulties in reaching consensus on an industry code of practice in a timely manner. To ensure that the introduction of consumer safeguards occurs concurrently with the introduction of competition, the Panel recommends that such safeguards be incorporated into auDA's initial registrar licence agreements. This would remove the need for auDA to establish immediately a forum for the development of industry codes, and would also allow time for new entrants to gain industry experience. More detail is provided in the Consumer Safeguards paper at Attachment D.

2.5 Resellers

> *Recommendation 2.5:*
> ❑ *Resellers will provide customer services to registrants.*
> ❑ *Registrars will be responsible for managing the behaviour of their resellers and will be ultimately responsible to the registrant.*
> ❑ *Resellers should disclose their relationship with the registrar(s).*
> ❑ *auDA should require registrars to include some minimum consumer safeguards in their reseller agreements.*

2.5.1   Domain name resellers operate at an intermediate level between registrar and registrant. The types of entities acting as domain name resellers range from law firms to ISPs. In the com.au market, most resellers bundle domain name registration with other value-add services, separately brand their domain name services, and set their own retail prices; therefore, they are more than merely agents of the registrar. In the .com domain name market, resellers often change registrars whilst retaining their own branding of domain name services, or use different registrars for various parts of their business.

2.5.2   The Panel expects that resellers will continue to be a part of the domain name services industry. Whilst some existing resellers may decide to seek accreditation as a registrar, for many resellers domain name service is not a core business activity, and there would be no reason for them to become a registrar. In a multiple registrars model, the Panel expects that registrars would compete for both reseller and registrant business, and resellers would compete for registrant business. The presence of resellers in the market would have a direct impact on the retail price of domain names, as well as on consumer choice of service provider.

2.5.3   The Panel's view is that auDA should not have a role in regulating behaviour at the reseller level, and registrars should be held responsible for managing the behaviour of their resellers. However, the Panel recognises that there should be a mechanism for auDA to intervene if a reseller is engaging in conduct that is harmful to registrants or prospective registrants. The Panel therefore recommends that auDA should require registrars to include some minimum consumer safeguards and incorporate industry codes of practice in their agreements with resellers. For example, resellers should be required to disclose their relationship with a registrar or registrars directly to registrants. See the Consumer Safeguards paper at Attachment D for more detail.

2.5.4   auDA should have the ability to take appropriate disciplinary action against registrars whose resellers fail to meet agreed minimum consumer safeguards and standards, and to ensure appropriate remedies and redress for registrants quickly. For example, auDA could direct a registrar to cease providing wholesale services to a reseller.

2.6 Registrant

Recommendation 2.6:
❑ *auDA will ensure adequate consumer safeguards for registrants by subjecting registry operators and registrars to agreed standards that include technical standards, data protocols, security, service levels, and escrow requirements.*
❑ *auDA will review its membership policy to make it easier for all registrants to participate at low cost.*

2.6.1   The Panel has identified a number of matters that are important from registrant perspective, such as choice of service provider, assured service levels, and full disclosure of domain name licence terms and conditions. The Panel recommends that auDA address these issues through its licence agreements with the registry operator(s), and its registrar accreditation process. These issues should also be dealt with under the industry code of practice, recommended by the Panel in section 2.4 of this report. See the Consumer Safeguards paper at Attachment D for more detail.

2.6.2   The Panel acknowledges that many registrants are concerned about the protection of their personal information. The Panel suggests that auDA require all registry operators and registrars to develop privacy policies (this could be included in the industry code of practice). As noted in paragraph 2.3.27, the Panel further suggests that bulk access to WHOIS data be controlled by auDA, with terms and conditions that prevent use of the bulk data for sending unsolicited postal mail, faxes, or email. auDA could maintain checks for conformance against these conditions by seeding the bulk data with entries that include addresses monitored by auDA.

2.6.3   In its public reports, the Panel proposed that all registrants be entitled to become members of auDA upon licensing a domain name, without additional charge. The intention of this proposal was to help ensure that auDA's board of directors is truly representative of, and responsive to, the Australian Internet community. The Panel noted public comments that the proposal would result in a heavy administrative burden on auDA, and could lead to 'active' members cross-subsidising 'passive' members. Whilst acknowledging the practical difficulties of conferring membership of auDA on all registrants, the Panel re-asserts its belief that registrants should be actively encouraged to participate in the regulatory regime, and that auDA should take steps to ensure that it is truly representative of the Australian Internet community. Therefore, the Panel recommends that auDA review its membership policy to make it easier for all registrants to participate at low cost.

2.6.4   The Panel notes that auDA has established a Dispute Resolution Working Group to develop a framework for dealing with disputes that may arise in relation to domain name policy and service.[10] The Panel wishes to emphasise the need for auDA's dispute resolution procedure to be accessible, fair, transparent, accountable, efficient and effective.

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[10] See http://www.auda.org.au/panel/drwg

2.7 Funding model for auDA

Recommendation 2.7:
- ❑ *Funding for auDA will be secured primarily, but not exclusively, through a levy on domain name registrations and renewals.*
- ❑ *auDA will charge fees for registry operator and registrar licences to meet the cost of managing compliance with technical requirements and consumer safeguards.*
- ❑ *auDA may also charge fees for accreditation of registrars, complaints-handling, dispute resolution and other services, on a cost-recovery basis.*
- ❑ *auDA will conduct regular reviews of its budgets and the results shall be published.*

2.7.1   The Panel has defined a regulatory role and identified a number of specific functions for auDA in managing the .au domain. In doing so, the Panel has been conscious of the need to keep administrative costs to a minimum. The Panel's Terms of Reference require it to consider an ongoing funding model for auDA. The Panel recognises that auDA must be adequately resourced so that it can be an effective industry regulator. The Panel is also conscious that auDA needs sufficient flexibility to determine its own budget and funding sources in response to changes in industry structure (eg. an increase in number of registrars/resellers) and new developments in the DNS (eg. the introduction of new 2LDs). The Panel has therefore recommended a scalable funding model that can be adjusted from time to time to meet auDA's budgetary requirements. The Panel recommends that auDA conduct regular reviews of its budget (eg. quarterly, or triggered by increasing volume of domain names). The results of such reviews should be published.

2.7.2   The Panel recommends that auDA secure its funding primarily, but not exclusively, through a levy on domain name registrations and renewals to meet the costs of policy development and the provision of central services such as consumer information and education. In this way, the costs associated with managing the .au domain are borne by all domain name licence holders. The levy would be collected by the registry operator and passed on to auDA.

2.7.3   In addition to the per domain name fee levied on domain name licence holders, auDA would also charge a licence fee for registry operator(s) and accredited registrars that varies in proportion to the number of domain names under management by each registrar or registry operator to meet the cost of regulation and compliance checking. A sliding fee structure ensures that registrars and registry operator(s) pay fees in proportion to the size of their domain name operation.

2.7.4   The Panel further recommends that auDA may charge fees for some services, such as registrar accreditation, complaints-handling and dispute resolution. The fees for these types of services should be set on a cost-recovery basis, so that service fees do not form a barrier to entry for market participants.

3. IMPLEMENTATION STRATEGY

> *Recommendation 3:*
> ❑ *auDA will adopt an implementation strategy that is in accordance with sound commercial practice and ensures that the integrity and stability of the .au domain is maintained during the transition period.*

3.1   Noting the expectations of industry, consumers and government, the Panel recommends that auDA implement the competition model outlined in section 2 of this report as quickly as possible. However the Panel notes that the major consideration is to maintain the stability of the .au domain for existing holders of domain name licences, as problems in introducing changes to the system could have a major economic impact on the many companies that are now increasingly relying on the Internet in Australia. Some aspects of the recommended competition model have not been fully detailed by the Panel but left to auDA to decide; the Panel is aware that this will necessitate additional technical and legal input during the implementation phase. In particular, the Panel advises auDA to obtain legal advice and consult with the ACCC with regard to any trade practices issues that may arise during implementation.

3.2   Noting the above, the Panel has not specified a timeline for implementation. The Panel advises that auDA publish its implementation timetable as soon as possible, to assist existing and prospective industry participants with their business planning.

3.3   The Panel recommends that auDA perform the following steps to implement the competition model:
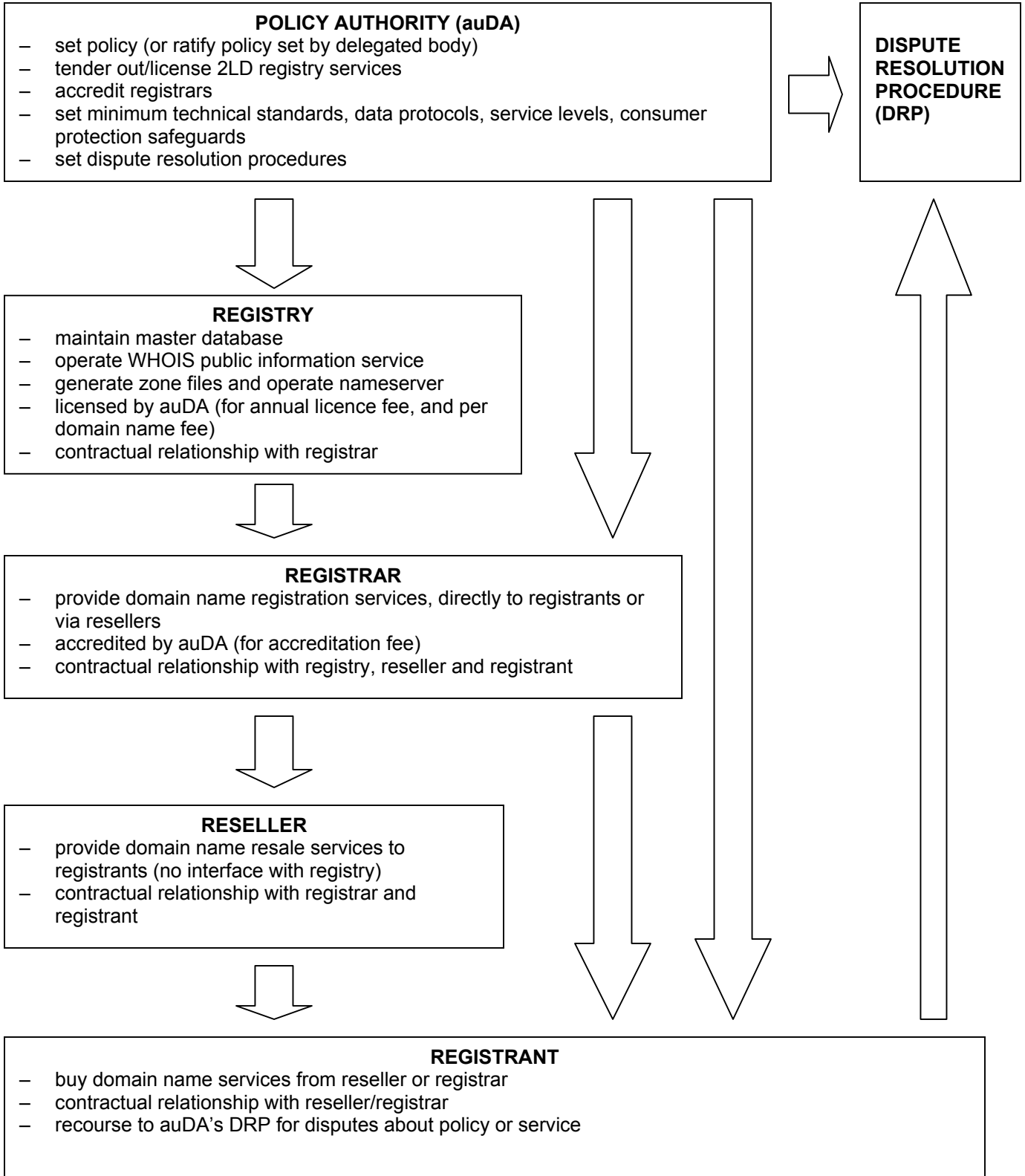
1. Issue a REOI for potential registry operators for all existing open 2LDs, to allow auDA to construct the RFT in accordance with the type of proposals received (eg. to determine if there will be tenders for individual 2LDs, or tenders to operate across all 2LDs). See Attachment B for more information on the tender process. The tender would include technical and functional specifications discussed in Attachment C of this report.
2. Issue REOI for potential registrars. Receive and assess EOIs.
3. Issue RFT for registry operators. Receive and assess tenders. Announce successful tenderer.
4. Accredit and negotiate agreements with initial registrars that have sufficient technical skills to help test the implementation of the registry by the registry operator(s), and identify problems for resolution.
5. The registry operator(s) to develop both a test and production registry based on international industry standards
6. Maintain AUNIC as the central backup WHOIS repository, and retain munnari.oz.au as a secondary nameserver for backward compatibility
7. Undertake a 3 month test-bed period, to test registry/registrar interfaces, new authoritative nameserver, and WHOIS service, using the test registry with a limited number of provisional accredited registrars (eg. 5) using a new 2LD (eg. testbed.au). Test interface between the registry and AUNIC for backup WHOIS services, and between the registry and munnari as a secondary nameserver. auDA, the registry operator(s) and the initial registrars to meet weekly to discuss progress and share information.

8. Go 'live' with the new system once auDA has certified that the system is stable and meets the standards agreed with the registry operator(s). auDA, the registry operator(s) and the initial registrars to meet weekly to discuss progress and share information for a further period of at least 3 months until the new environment is stable. This will ensure that the stability of .au is maintained, during a major change to the operation of .au.

9. New registrars to be tested using the test registry as part of accreditation before accessing the production system to ensure that the integrity of .au is maintained.

3.4   Steps 1 and 2, and steps 3 and 4 would be performed in parallel. Steps 8 and 9 can also be performed in parallel. The Panel recommends that auDA also initiate a process for developing the industry code of practice during the implementation phase.

3.5   The Panel recognises that during the implementation phase, auDA will be preparing to introduce changes to domain name policy according to the recommendations of the Name Policy Advisory Panel, as well as a dispute resolution policy following the report of the Dispute Resolution Working Group.

ATTACHMENT A: DIAGRAM OF PROPOSED COMPETITION MODEL

POLICY AUTHORITY (auDA)
– set policy (or ratify policy set by delegated body)
– tender out/license 2LD registry services
– accredit registrars
– set minimum technical standards, data protocols, service levels, consumer protection safeguards
– set dispute resolution procedures

DISPUTE RESOLUTION PROCEDURE (DRP)

REGISTRY
– maintain master database
– operate WHOIS public information service
– generate zone files and operate nameserver
– licensed by auDA (for annual licence fee, and per domain name fee)
– contractual relationship with registrar

REGISTRAR
– provide domain name registration services, directly to registrants or via resellers
– accredited by auDA (for accreditation fee)
– contractual relationship with registry, reseller and registrant

RESELLER
– provide domain name resale services to registrants (no interface with registry)
– contractual relationship with registrar and registrant

REGISTRANT
– buy domain name services from reseller or registrar
– contractual relationship with reseller/registrar
– recourse to auDA's DRP for disputes about policy or service

ATTACHMENT B: TENDER PROCESS

1.1 The Panel considers it essential that the tender process to award registry operator rights be conducted by auDA in accordance with sound commercial practice and a view to principles of open and effective competition, ethics, fair dealing and accountability.

1.2 The tender process may be broadly characterised by four stages:

1. Identification stage

- ❏ identify the objectives of the tender – to introduce competition, improve efficiency (including through innovation and price cap regulation), minimise 'price of service' to registrars and maximise quality of service, etc.;
- ❏ define the terms of reference for the planning stage;
- ❏ identify the need for external advisors in such areas as contract management, finance, taxation, technology, security and law; and
- ❏ issue request for expressions of interest .

2. Planning stage

- ❏ develop a detailed tender management plan, including timetable, financial models and risk management plan, consistent with the objectives of the tender and related tender strategy approved by the auDA Board; and
- ❏ identify alternative tender strategies (eg. one or two stage process), the regulatory environment, (eg. price caps, rate of return regulation, etc), a precise definition of what is being tendered, any ownership/control restrictions (eg. foreign ownership/control, registrar ownership/control), staff and other resources required to conduct the tender efficiently and effectively (eg. need for law enforcement background inquiries of tenderers, processes for engagement of advisors/consultants, funding the tender process, etc).

3. Implementation stage

- ❏ selection of any steering committee or panel to oversight/guide the tender process, including approval of tender documentation;
- ❏ selection of team to manage/run tender process;
- ❏ selection, engagement and management of advisors/consultants;
- ❏ management of the tender process;
- ❏ development and maintenance of the tender management plan, including timetable with milestones and tender evaluation plan;
- ❏ preparation, execution and management of confidentiality agreements;
- ❏ development of financial model(s) – cost, pricing and evaluation;
- ❏ preparation of RFT, including specification of service requirements and reconciliation of RFT against cost model(s);
- ❏ preparation of Service Level Agreement (SLA), including definition and measurement of service levels;
- ❏ development/negotiation of registry licence agreements, including performance, pricing and other terms and conditions;
- ❏ management of due diligence;
- ❏ preparation of relevant legal, security and financial risk assessments;

- evaluation of tenders;
- post-tender negotiations;
- selection of successful tenderer and granting of licence(s);
- post-tender responsibilities, including licence agreement management and SLA management; and
- licence agreement execution.

4. Evaluation stage

- an independent, post-tender evaluation of the tender process, including report to the auDA Board covering lessons arising from the process and whether the process could be carried out more economically, efficiently and effectively in future.

ATTACHMENT C: TECHNICAL REQUIREMENTS FOR REGISTRY AND REGISTRAR

1. Introduction

1.1   This paper outlines some of the technical requirements that auDA will need to specify at both registry and registrar level, to ensure the stability and integrity of the Australian DNS.

1.2   The Panel has drawn on existing material in developing technical requirements for registry and registrars operating in the .au domain, in particular the registry and registrar agreements used by ICANN.[1] Wherever possible auDA should use international standards. This will ensure that Australian registrars can compete in the international domain name market, as well as provide more competition in Australia through the existence of international registrars. This will likely lower the costs for Australian consumers in the long term.

1.3   It is expected that the Panel's recommendations would be used by auDA as the basis for legal drafting of registry and registrar licence agreements.

2. Functional specifications

2.1   The registry operator(s) must provide:
❑   a registry database for storing all domain name details;
❑   a protocol for allowing registrars direct access to the registry database;
❑   an authoritative nameserver service;
❑   a security architecture that protects the infrastructure as per its national importance; and
❑   a public WHOIS service.

2.2   The registry functions should be located in a carrier-class data center, with redundant network connections (through multiple telecommunication carriers) of at least 2 Mbit/s capacity each, redundant air-conditioning systems, redundant power supplies (including UPS and diesel power backup), fire detection and control systems (sprinklers or gas fire suppression), 24-hour manned security systems. The registry operator(s) should be required to provide a security policy compliant with AS4444, which incorporates a full disaster recovery plan and backup procedures. The registry operator(s) must also ensure adequate security of the registry database and all other critical systems. An annual security audit will be conducted.

2.3   The registry-to-registrar protocol should be consistent with IETF standards. The IETF Provisioning Registry Protocol (provreg) working group is currently developing a new protocol designed to support a multiple registrar model, as well as support the existence of multiple registries around the world.[2] So far, the working group has drafted a working document that details the requirements for a generic registry-registrar protocol, and there is a proposed protocol currently under evaluation. A final draft of the protocol is scheduled to be ready by September 2001 for submission for the approval

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[1] ICANN-NSI Registry Agreement (http://www.icann.org/nsi/nsi-registry-agreement-04nov99.htm) and ICANN Registrar Accreditation Agreement (http://www.icann.org/nsi/icann-raa-04nov99.htm)
[2] IETF Provisioning Registry Protocol Working Group (http://www.ietf.org/html.charters/provreg-charter.html)

process as an IETF standard. Depending on the outcome of this process, auDA may decide to adopt the new protocol, or an appropriate subset. The Panel considers it likely that open source implementations of the protocol will be available for Australian domain name registrars. This protocol is based on using XML (extensible markup language) from the World Wide Web Consortium[3] to provide an extensible protocol that supports the addition of new services. This is important in a multiple registry environment, where not all registries will provide the same features. It also allows support for the policy rich environment to be incorporated in the protocol (eg. incorporating sign-off procedures from an independent body to approve certain domain names), and will support the different requirements of the various 2LDs within .au.

2.4   The authoritative nameserver service is likely to be implemented with several nameservers to maintain high levels of availability. The registry operator(s) may operate a primary nameserver, and may cooperate with other registry operators, carriers, or ISPs to host secondary nameservers. The registry operator(s) will be responsible for a specified overall level of system reliability. The registry operator(s) will be responsible for generating the DNS zone file and distributing to the secondary nameservers (or other nameservers as specified from time-to-time by auDA) on a close to real-time basis. The zone file may also be made available by auDA to third parties on the approval of auDA, and subject to terms and conditions preventing the use of the file for generating mailing lists for sending unsolicited email, fax or postal mail. It is desirable that these nameservers be located in geographically diverse locations, including the US and Europe as well as Australia, to ensure that international Internet users have effective access to Internet sites using a .au domain name.

2.5   The authoritative nameservers will comply with the IETF standards for the DNS (RFC1035, RFC2181, RFC 2182)[4]. In addition, DNS extensions (security, transactional updates, internationalisation, etc) adopted or proposed by IETF will be assessed by auDA or the registry operator(s) and supported consistent with industry acceptance and prudent operational considerations.

2.6   The registry operator(s) will be responsible for operating the WHOIS service, compliant with IETF standard RFC 954[5]. The standard WHOIS service is intended as a lookup service for registries, registrars and registrants, as well as for other individuals and businesses that wish to query details of domain names or nameservers stored in the registry. Registrars will be able to provide a front-end web interface to the standard WHOIS service, through the use of the registry-registrar protocol. In addition, the registry operator(s) will be required to provide its own front-end web interface to allow convenient user access to the WHOIS service.

2.7   The WHOIS service must be able to handle high transaction load and be integral to the standard suite of registry services, and meet service level agreements. The service will return a single response per domain name or nameserver query.

2.8   The registry operator(s) will be responsible for providing at least a daily update of the WHOIS database to the central data repository managed by auDA for all 2LDs in

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[3] See http://www.w3c.org
[4] IETF RFCs (http://www.ietf.org/rfc.html)
[5] IETF RFCs (http://www.ietf.org/rfc.html)

.au. The centralised WHOIS service will not need to be maintained to the same levels of service availability.

2.9   The RFC 954-conformant service provided by the registry will have the following features:

❑   standard protocol accessible over port 43;
❑   consistent format (fields and formatting) for all registrars;
❑   near real-time updates, eliminating timing problems when modifying registry information; and
❑   extensible field capability.

2.10   The Panel suggests that auDA convene a technical working group to track international best practice for DNS provisioning.

3. Performance specifications

3.1   The performance specification matrix in Table A below specifies the major elements of performance. The full definitions of these service levels would be specified in the licence agreement between auDA and the registry operator(s). Examples of definitions have been provided in Appendix 4.

3.2   The performance specification matrix in Table A raises the quality of the Australian DNS infrastructure to international levels, and is consistent with a critical infrastructure to the Australian economy. These figures can be considered to approach the service levels expected of telephone communication systems. Note that the nameserver and WHOIS services will be kept to within 15 minutes of updates to the core registry database. This will result in a significant improvement in response times when an organisation wishes to change the physical location or IP addresses of their Internet servers. By making the registry operator(s) responsible for all three critical registry functions, it can ensure that the service levels below can be met for the Australian community.

3.3   The processing time figures represent the performance for 95% of transactions. The planned outage times are not counted in the service availability figures listed in item 1. They allow for maintenance and major upgrades to the registry, but ensure that the business of registrars is not adversely affected during these times by choosing a maintenance window well outside of normal business hours.

Table A: Performance Specification Matrix (see Appendix 4 for definitions)

	Performance Specification Description	Registry Database	Nameserver	WHOIS
1	Service availability	99.9% per calendar month	99.999% per calendar year	99.5% per calendar month
2	Processing time – add, modify, delete	3 sec for 95%	NA	NA
3	Processing time – query domain	1.5 sec for 95%	NA	NA

4	Processing time – WHOIS	NA	NA	1.5 sec for 95%
5	Processing time – nameserver resolution	NA	1.5 sec for 95%	NA
6	Update frequency	NA	15 min for 95%	15 min for 95%
7	Planned outage – duration	8 hrs per calendar month	not allowed	8 hrs per calendar month
8	Planned outage – timeframe	0600-1400 AEST Sun	not allowed	0600-1400 AEST Sun
9	Planned outage – notification	3 days	not allowed	3 days
10	Extended planned outage – duration	18 hrs per calendar quarter	not allowed	18 hrs per calendar quarter
11	Extended planned outage – timeframe	0600-2400 AEST Sun	not allowed	0600-2400 AEST Sun
12	Extended planned outage – notification	28 days	not allowed	28 days
13	Cross-network nameserver performance	NA	300 ms RTT and 10% packet loss	NA

4. Service level agreement (SLA)

4.1   The purpose of an SLA is to provide a clear statement of expected service levels in relation to specified functions, against which performance can be monitored and measured at regular intervals. SLAs would exist between registry and registrar, and registrar and registrant. The SLA would normally refer to the performance specifications in Table A, and define financial penalties to be provided to registrars by the registry for failure to meet these standards. The financial penalties ensure that a registry operator has the incentive to maintain high levels of performance. If the performance of a registry operator was consistently poor, this would be grounds for auDA to cancel its licence and award the registry to another registry operator. The presence of multiple registry operators will make this step easier and more feasible.

4.2   Any SLA needs to be cognisant of maximum availability of multiple backbone providers (ie. the SLA usually refers to the performance of the registry operator's system measured at the interface between the registry operator and the external Internet, and does not take into account the quality of the network connection between any particular registrar and the registry).

5. WHOIS specifications

5.1   Domain name data is currently accessible by the public through the WHOIS protocol, however there is no commonly recognised standard set of information or user interface. Table B below demonstrates the differences in WHOIS data sets used by other ccTLDs and for the gTLDs.

Table B: WHOIS data sets provided by AUNIC, ICANN, CIRA and Nominet

WHOIS provider	WHOIS data set
AUNIC (provides WHOIS for all .au 2LDs except asn.au, csiro.au and net.au)[6]	• the name of the third level domain (3LD); • the name and postal address of the 3LD holder; • the original creation date of the 3LD; • the date of the last modification to the 3LD contact details; • the name, postal address, telephone number, fax number, email address and NIC handle of the administrative contact for the 3LD; and • the name, postal address, telephone number, fax number, email address and NIC handle of the technical contact for the 3LD.
ICANN (mandated WHOIS data set provided by all accredited registrars)[7]	• the name of the second level domain (SLD) being registered and the TLD for which registration is being requested; • the IP addresses of the primary nameserver and secondary nameserver(s) for the SLD; • the corresponding names of those nameservers; • the identity of the registrar (which may be provided through the registrar's website); • the original creation date of the registration; • the expiration date of the registration; • the name and postal address of the SLD holder; • the name, postal address, email address, voice telephone number and (where available) fax number of the technical contact for the SLD; and • the name, postal address, email address, voice telephone number and (where available) fax number of the administrative contact for the SLD.
CIRA (provides WHOIS for all .ca domains)[8]	• the domain name; • the name of the domain name holder; • the name of the registrar; • the renewal date of the registration; • the approval date of the registration; • the date of the last change to the registration details; • the name and IP addresses of the primary and secondary nameservers; • the name, job title, postal address, phone number, fax number and email address of the administrative contact; and • the name, job title, postal address, phone number, fax number and email address of the technical contact.
Nominet (provides WHOIS for co.uk,	• the name of the 3LD; • the name of the 3LD holder;

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[6] AUNIC WHOIS query (http://www.aunic.net/whois)
[7] ICANN Registrar Accreditation Agreement Section II.F.1(http://www.icann.org/nsi/icann-raa-04nov99.htm - IIF)
[8] CIRA WHOIS query (http://www.cira.ca/en/re_whois.html)

org.uk, net.uk, plc.uk and ltd.uk)[9]	- the name of the registrar; - the date of the last update to the registration record; and - the name and IP addresses of the nameservers.

5.2   The Panel considers that the WHOIS service is an essential feature of the DNS, as it allows users to find out information about the holder of a domain name. It is therefore desirable for auDA to mandate a standard WHOIS data set and user interface for the .au domain; this is particularly important in a multiple registries model, where domain name information is stored in more than one registry database.

5.3   The Panel recommends that the WHOIS data set for .au comprise at least the following elements:

❑   the name of the domain name registered;

❑   the IP addresses of the primary nameserver and secondary nameserver(s) of the name registered;

❑   the corresponding names of those nameservers;

❑   the identity of the registrar;

❑   the original creation date and term of the registration;

❑   the name, postal address, e-mail address, voice telephone number, and (where available) fax number of the domain name registrant;

❑   the name, postal address, e-mail address, voice telephone number, and (where available) fax number of the technical contact for the name registered; and

❑   the name, postal address, e-mail address, voice telephone number, and (where available) fax number of the administrative contact for the name registered.

5.4   The DNS service includes Internet critical information about the listed DNS servers for each (sub) domain that is registered. Although it appears to be a duplication of information, it is vital that the WHOIS information replicates this data. This provides a mechanism for review of exposed DNS information (ie. the Start of Authority and listed nameserver for each domain) by querying WHOIS for a domain object. DNS systems sometimes fail. They are also subject to misconfiguration. WHOIS is not a dependency for deployed Internet applications to the same extent, is less likely to be prone to misconfiguration (since production and maintenance of WHOIS data is essentially centralised) and provides additional information such as change control and audit.

5.5   It is possible that DNS zones will be constructed from WHOIS domain objects. However it is also possible that both DNS zones, and WHOIS domain objects, will themselves be the product of another database which is the authoritative source of information, provided by the registry for the 2LD and with suitably access-controlled update rights for registrars, mediated in behalf of registrants. There is no clear competition issue in regards to the status of WHOIS and DNS data with respect to each other, but there is a wider community interest that both are maintained and reflect each other to a high degree. Inconsistencies in either suggest a failure of deployment of domain-related services and should be resolved.

5.6   It is important to note that WHOIS data comprises only the information that is publicly accessible; there is other data associated with domain name registrations that is held by the registry and registrar that should not be included in the WHOIS data set (eg.

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[9] Nominet WHOIS query (http://www.nic.uk/)

billing information, other personal details of the registrant). Some fields may be optional (eg. fax number of the administrative or technical contact). Domain name expiry and other fields that would allow third parties to harrass legitimate current domain name holders should be limited, except to registrars who need this information.

5.7   The Panel notes that the value of the WHOIS service is entirely dependent on the quality of the information it provides. Accordingly, it is important that registrants be required, under the terms and conditions of the domain name licence agreement, to maintain correct contact details. Registrars will be required to verify the email address of the administrative contact at the time of registration and then every six months. The Panel recommends that the registry operator(s) should be entitled to de-list or de-register a domain name if the registrant fails to maintain correct contact information (or deliberately provides incorrect contact information).

5.8   Bulk WHOIS data can be used for a range of purposes including searching services (eg. for domains that contain certain strings, or for domains corresponding to particular geographic locations). The bulk WHOIS data can be used by registrars to create specialised services as a point of differentiation. Access to bulk WHOIS data has benefits and problems (most notably unsolicited advertising). One option is to have a greater amount of data available for a lookup service, versus the amount of data available to a third party in bulk form. For example, the bulk access may just contain the list of domain names, and the name or organisation name of the registrant – but not include email and phone contact details. It may also be desirable to adopt an opt-in policy for bulk WHOIS data (particularly relevant for individuals for an id.au or other personal domain space). The Panel recommends that access to bulk WHOIS data be controlled by auDA.

6. Data escrow specifications

6.1   Data escrow is the practice of storing data in a secure, independent location for access by a third party under strictly limited circumstances. Data escrow is an essential requirement for both registry and registrars, for consumer protection and DNS integrity reasons.

6.2   Data escrow should be an automated feature, to minimise the risk that it will be neglected. The Panel recommends that this involve regular backups of essential data to an escrow site on a regular (at least weekly, preferably daily) basis. The registry operator(s) will maintain full and accurate records, in accordance with Australian Standard, Records Management AS4390. These will be made available in a timely manner to the subsequent successful tenderer. This is critical in the event that a registry operator fails.

6.3   The registry operator(s) will also be required to store a copy of the registry software in escrow, so that auDA is able to resume service if necessary. auDA must also have the licence to use the software for a short period.

6.4   At registry rollover, there must be a seamless transition between an incumbent registry operator and the designate registry operator. All data required to perform the handover of the .au DNS to the next registry operator should be provided. Adequate planning between the incumbent registry operator and the designate registry operator to ensure continuous service is essential, including a reasonable handover process. The

Panel suggests that all required data should be transferred electronically in transparent form (ie. non-opaque and non-obfuscated ASCII or UNICODE UTF-8 or similar textual form). Additionally, the two parties may agree to non-electronic transfer, as long as this does not preclude a seamless transition.

7. Domain name expiry and deletion

7.1   The Panel considers it essential that all .au domain names under the control of a registry operator or registrar that expire or are deleted at the request of a registrant become available (following a fixed grace period of 30 days to allow the current registrant to renew the domain name) to the entire competitive market as soon as technically feasible.

7.2   Under no circumstances should a registry operator or registrar squat on expired or unregistered domain names. The Panel recommends that domain names that are shown to be held in bad faith by a registry operator or registrar be made available to the first aggrieved registrant pending resolution via auDA's dispute resolution policy.

7.3   The Panel further recommends that registry operators and registrars, and any closely held companies or organisations, be prohibited from using domain availability information (from WHOIS or other sources) to speculate on the likely acquisition of domain names from registrants in any way that diminishes competition and/or increases the costs to registrants. Examples of undesirable practices include:
- ❑   a registry operator who operates a web-based WHOIS service, which squats on domain names pending an increased fee, auction or other market-distorting contrivance;
- ❑   a registrar who takes a domain name off the market in response to a WHOIS query from a prospective registrant, and then tries to obtain additional money from that prospective registrant; or
- ❑   a registrar who uses business registration information to squat on related domain names, and then tries to obtain additional money from the relevant prospective registrant.

ATTACHMENT D: CONSUMER SAFEGUARDS

1. Introduction

1.1   This paper outlines some consumer safeguards that the Panel considers necessary for the protection of registrants in a competitive domain name market place.

1.2   The Panel has drawn on existing material, for example the practices of other countries such as New Zealand[1], Canada[2] and the UK[3], as well as ICANN.[4] Consumer safeguards in the Australian telecommunications industry are well-documented (and in some cases, legislated) and may be applicable to the domain name industry.[5]

1.3   It is expected that the Panel's recommendations would be used by auDA as the basis for legal drafting of registry and registrar licence agreements.

2. Service level agreement (SLA)

2.1   The purpose of an SLA is to provide a clear statement of expected service levels in relation to specified functions, against which performance can be monitored and measured at regular intervals.

2.2   The SLA between registrar and registrant would include matters such as:
❑   stated time limits for domain name registrations (eg. minimum 2-day turnaround);
❑   provision of customer support services;
❑   advance payment of fees; and
❑   complaints handling mechanism.

3. Disclosure of information

3.1   Registrars should be required to fully disclose all terms and conditions associated with domain name registration, including price and billing information. Most of this information could be included in a standard domain name licence agreement (ie. to be used by all registrars across all 2LDs). Another option would be to require registrars (or the registry) to issue registrants with a 'certificate of registration' (which could be provided electronically to reduce postage and handling costs), including the details of the domain name, the registrant, the registrar, the licence period and obligations of the registrant.

3.2   Registrars should also be constrained from providing misleading information. For example, registrars in the UK[6] and New Zealand[7] must agree not to misrepresent the

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[1] Domainz .nz Provider Agreement V1.2, 27 July 2000
(http://www2.domainz.net.nz/registration/NewSystem/ACCRED-AG-V1.2.pdf)
[2] CIRA Procedures, Policies and Certification Requirements for Registrars
(http://www.cira.ca/official-doc/23.Registrar_Agreement.doc)
[3] Nominet UK Tag Holder Contract (http://www.nominet.org.uk/tag-terms.html)
[4] ICANN Registrar Accreditation Agreement (http://www.icann.org/nsi/icann-raa-04nov99.htm)
[5] For example, the Australian Communications Industry Forum (ACIF) Consumer Codes
(http://www.acif.org.au/ACIF/files/Consumer_Codes_booklet.pdf)
[6] Nominet UK Tag Holder Contract Section 4 (http://www.nominet.org.uk/tag-terms.html)
[7] Domainz .nz Provider Agreement V1.2, 27 July 2000 Schedule B
(http://www2.domainz.net.nz/registration/NewSystem/ACCRED-AG-V1.2.pdf)

nature of a domain name; in particular, they must not indicate that registering a domain name creates any proprietary rights in that name. Ultimately, the provisions relating to false and misleading information in the Trade Practices Act would apply.

4. Transfer between registrars

4.1   One of the benefits of a competitive marketplace is that registrants are able to choose their preferred registrar at the time of registration, and can change their registrar at any time during the term of the domain name licence. The Panel considers it essential that registrars and the registry operator(s) be required to facilitate the speedy transfer of registrant information, upon request by a registrant to transfer their domain name registration to another registrar.

4.2   The Panel notes that it may be permissible for a registrar or the registry operator(s) to charge a transfer fee. For example, CIRA registrars may charge an administrative fee for transferring a registrant to another registrar, however it may not exceed $CAD20.00 regardless of the number of domain name licences held by the registrant.[8]

4.3   While there may be a right for the registrant to change registrars, this should not be at the cost of the original registrar unless it is for reasons of breach by the registrar. Special consideration needs to be given to the rights or recourse of registrants in the event that a registrar goes bankrupt or otherwise ceases to exist.

5. Privacy of personal data

5.1   The domain name registration process does not require registrants to provide personal information, apart from the name and contact details of their administrative and technical contacts. However, it is likely that registrars will collect additional personal information as part of their broader business relationship with the registrant (eg. ISP and web-hosting services, etc).

5.2   The Panel recommends that registrars be required to put in place appropriate arrangements to protect the privacy of personal data. Registrars should not be permitted to sell or otherwise disclose personal data without the registrant's knowledge and consent. For example, ICANN requires its accredited registrars to agree to take reasonable precautions to protect personal data from loss, misuse, unauthorised access or disclosure, alteration or destruction.[9]

5.3   The registry operator(s), registrars and resellers should be encouraged to use P3P headers in their website to reflect privacy policies. In addition, it is recommended that a 'Privacy' area be linked from the web homepage for consumers to easily obtain information about the privacy policies of an organisation.

5.4   The Panel notes that the new amendments to the *Privacy Act 1988* may apply to some large registrars (in general, small business operators are exempt from the new privacy provisions).

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[8] CIRA Registration Rules V1.2 (http://www.cira.ca/official-doc/24.CIRA_Policiesv2.1.txt)
[9] ICANN Registrar Accreditation Agreement Section II.J.7 (http://www.icann.org/nsi/icann-raa-04nov99.htm#IIJ)

6. Reseller arrangements

6.1   The Panel has recommended that registrars should be responsible for the behaviour of their resellers, and should be ultimately responsible to the registrant. Therefore, registrants who use a reseller instead of dealing directly with a registrar, will still be covered by the consumer safeguards imposed on registrars. As a reinforcement measure, the Panel recommends that registrars be required to include compliance with consumer safeguards as part of the terms and conditions of their reseller agreements. A reseller should be required to disclose to the registrant, at the time of registration, the name of the registrar which will be processing the registration.

7. Industry code of practice

7.1   The Panel recommends that a code of practice be developed by the industry, in consultation with the ACA and ACCC, to handle matters such as transfer of registrant, and reseller arrangements. However, the Panel recognises that the development of an industry code will require time and a structured process. The Panel therefore recommends that consumer safeguards be incorporated into auDA's registrar agreements, until the code is finalised.

7.2   The Panel notes that ICANN Accredited Registrars have developed a draft code of conduct, which could be used as a starting point for the Australian code of practice. It is set out in Table A below, with some changes to indicate how it would apply to auDA accredited registrars. The Panel recommends that, until the Australian code is finalised, auDA ensure that its registrar agreements incorporate at least all the matters listed in the ICANN draft code.

Table A: Registrar Code of Conduct

Preamble

Registrars accredited by auDA seek to operate in good faith and according to established standards, practices and rules: to promote confidence of users and other important communities; to maintain fair and open competition; and to advance the reputation and standing of the Registrar community.

Purpose

This Registrar Code of Conduct describes key areas of operation for accredited registrars competing in the registration of domains within .au. The Code has been developed by operational Registrars, to reflect experience under the terms and conditions of the auDA Registrar Accreditation Agreement, identifying roles and responsibilities common to all registrars and providing interpretive guidance; it should thus be considered in concert with the Agreement, with the detailed operational Frequently Asked Questions document, and any other documentation relevant to a particular transaction.

The Registrars shall review this Code annually. All auDA Accredited Registrars shall affirm their compliance with the provisions of the Code during the periodic re-accreditation process.

Provisions:

1. Resolution of Customer Grievances

Registrars and their agents should endeavor to resolve customer complaints in an expeditious and courteous manner. Registrars and their agents are expected to furnish each registrant with contact information for the registrar's and reseller's customer support personnel, to include information such as, phone number, fax number, e-mail address or link to home page. Inclusion of such information in registrar's registration agreement or in a confirming e-mail sent to registrants would normally satisfy this requirement.

2. Bad Faith Registrations and Front running

auDA accredited registrars should refrain from registering domain names on their own behalf, or on behalf of any director, officer, employee or agent of such registrar, if such registration would constitute a bad faith registration under the auDA dispute resolution policy. Further, auDA accredited registrars shall not engage in Frontrunning. For purposes hereof, "Frontrunning" shall mean employing a process designed to anticipate a consumer's preference for a domain name (via sniffing of WHOIS data or other process), or otherwise obtaining specific information regarding such preference, with the intent of registering such domain name on behalf of the registrar, or any director, officer, employee or agent of registrar, and subsequently registering that domain name on behalf of the above parties

3. Disclosure to consumer of applicable Registrar information

With regard to registrations of domain names initiated at (i) web sites operated by registrar under a trade name other than the trade name listed on the auDA list of registrars or (ii) web sites operated by third parties (eg. resellers), the identity of the registrar (using the trade name shown on the auDA list of registrars) must be explicitly and conspicuously disclosed to the registrant prior to the completion of the registration.

4. Warehousing

auDA Accredited Registrars shall not engage in Warehousing.

Warehousing, also referred to as domain names speculation, is defined as the pre-registration of domain names not on behalf of a registrant, but knowingly for the express purpose of resell at a later date.

Registration of a domain name for other than for the conduct of its own business or the express purpose of acting as an agent for a Registrant shall constitute a violation of that agreement.

5. Fraudulent transfers (Hijacking)

auDA accredited registrars should refrain from fraudulently transferring domain names on their own behalf, or on behalf of any director, officer, employee or agent of such registrar. Such fraudulent transfer, with the intention of depriving the rightful domain name registrant, or "domain hijacking" shall be considered a violation of the auDA Registrar Accreditation Agreement.

6. Registrar's rights to domain name registration

Domain names not renewed must be returned to the Registry at the time of expiration or prior to the conclusion of any grace period. Registrars have no claim or right to domain names not renewed proactively by the domain name registrant.

7. Registration Period

The registration period submitted by the Registrar to the Registry must match the period that the registrant has registered for with the Registrar.

8. WHOIS Integrity

Registrars are required to maintain the integrity of central WHOIS information. Reliable and current nameserver and IP addresses must be maintained, as stated therein. Registrars must investigate and attempt in good faith to correct information found to be inaccurate or unreliable for those domain names for which they are responsible.

9. Transfers

This paragraph modifies or clarifies the current process of transferring domain name registration sponsorship between registrars.

A. Registrar acknowledges that the policy that the sponsorship of a domain name not be transferred between registrars within the 60 day period following registration shall be enforced by the registry

B. Prior to initiating with the registry a change in sponsoring registrar of a domain name, the gaining registrar must obtain express authorization from an individual who has the apparent authority to legally bind the registrant. For purposes of clarification, the term "express authorization" shall mean authorization, in written or electronic form, conveyed directly to the gaining registrar by the individual having apparent authority to bind the registrant. Oral communications from such individual shall not constitute valid authorization.

C. Each registrar will be required to retain and provide records of authorizations.

D. Registrants must be made explicitly aware of the gaining registrar's identity and must agree to the gaining registrar's applicable terms and conditions prior to the initiation of a transfer request. This may typically occur when a reseller moves a group of domain names from one registrar to another registrar.

E. The transfer of sponsorship of a domain name registration between registrars may not be initiated concurrently with a change of the registrant of such domain or the nameservers associated therewith.

F. The gaining registrar must maintain a record of the identity of the registrant of a domain name transferred to such gaining registrar and the nameservers associated with such domain name (each as reflected in the WHOIS database immediately prior to initiation of the transfer) for a period of at least 15 days subsequent to the completion of a transfer. Additionally, the losing registrar may not disable DNS services for a period of 90 days subsequent to the transfer.

9. Procurement and Retention of Documentation.

A. The Registrar License and Agreement provides certain requirements regarding the procurement and retention of documentation with respect to a registrar's business. All such documentation (i) shall be retained by the registrar in a central location for the time periods prescribed in the Accreditation Agreement, and (ii) shall be subject to inspection by auDA upon reasonable notice to the registrar. The registrar's obligations under this paragraph may not be delegated to any third party(ies), including, without limitation, any agents or reseller(s) of the registrar.

B. With respect to documentation related to a change of sponsoring registrars, copies of all relevant documentation regarding such change shall be forwarded to the registry and/or the losing registrar, within a commercially reasonable period of time, upon request by the registry or losing registrar.

8. Dispute resolution

8.1   The Panel considers it essential that registrants have access to a dispute resolution process to address any issues arising in respect of the allocation of domain names between the registrant and registrar (including the reseller of the registrar is applicable). A self-funding model such as the industry-funded Telecommunications Industry Ombudsman model may be appropriate to consider. The Panel notes that auDA has established a Dispute Resolution Working Group to develop a dispute resolution policy for the .au domain.

COMPETITION MODEL

auDA ADVISORY PANEL NO. 2 TERMS OF REFERENCE

Revision Date: 23 June 2000

This document is the Terms of Reference for the auDA Policy Advisory Panel Number 2, for the development of a Competition Model for the .au namespace.

1. Objective

auDA's objective is to develop the .au namespace in the interests of domain name users and the industry. A key component in delivering this objective is the implementation of competition in the provision of domain name services, to deliver the best result for:
- quality of service
- user choice
- lowest cost

2. Principles

In recommending the introduction of a particular competition model for the provision of .au domain name services, the Panel should take into account competition and industry specific principles.

General Competition Principles

- fostering business efficiency, especially where this results in improved international competitiveness
- industry rationalisation resulting in more efficient allocation of resources and in lower or contained unit production costs
- industrial harmony
- improvements in the quality and safety of goods and services and expansion of consumer choice
- supply of better information to consumers and business to enable informed choice in their dealings
- promotion of equitable dealings in the market
- promotion of industry cost savings resulting in contained or lower prices at all levels of the supply chain
- equality of access and a level playing field for all who want to participate in the market

Industry Specific principles:

- The integrity of the .au TLD is paramount, and the introduction of competition must not interfere with a consistent view of .au domain names.
- Regulation & administration of the .au namespace is undertaken on a cost-recovery not-for-profit basis.
- Non-contestable elements of the domain name process must be justified, and operated in an industry-neutral manner.
- Contestable elements of the domain name process, and the introduction of competition must be commensurate with long term stability of the DNS

3. Activity

This Advisory Panel will develop a Model to be used to introduce competition in the provision of domain name services in the .au namespace. The panel will review how registries, registrars, and users operate and interact, including but not limited to issues of:
- single/multiple registries
- location and content of registry / registrar data
- access, ownership and IP of registry data
- communication between registry and registrar, and between Users and registry / registrar
- security
- transfer of users between registrars, including registrars who cease to operate
- service levels - quality and timeliness
- licensing and accreditation of registry / registrar
- barriers to entry
- dispute resolution between various levels
- equality of access
- registry and registrar fees
- continuing funding model for auDA

4. Outcome

The panel's operations will have multiple stages, with a separate report from each stage:
Stage 1:   Define existing environment and scope, including the domain name services provided by and used by entities
Stage 2:   Review current practices worldwide in other domains
Stage 3:   Recommend a competition model for .au
Stage 4.   Provide a strategy for the implementation of the model
Stage 1 and 2 may run concurrently.

5. Duration

The estimated timeline for the panel is subject to change. The current estimate is:

Elapsed Time	Time	Activity
		auDA board to confirm Terms of Reference
2 weeks	2 weeks	Call for participants
4 weeks	2 weeks	auDA board to confirm participants
7 weeks	3 weeks	First meeting; confirm Panel operational procedures; start Stage 1 and Stage 2
11 weeks	4 weeks	Stage 1 Documentation Draft complete
15 weeks	8 weeks	Stage 2 Draft complete; start Stage 3
23 weeks	8 weeks	Stage 3 Draft complete; start first public consultation period
26 weeks	3 weeks	End first public consultation period; start Proposed report.

28 weeks	2 weeks	End Proposed report; start second public consultation period
30 weeks	2 weeks	End second public consultation period; start final Report
32 weeks	2 weeks	Complete final Stage 3 report; submit to auDA board
34 weeks	2 weeks	Stage 3 report approved by auDA board, commence Stage 4
38 weeks	4 weeks	Stage 4 complete
51 weeks	13 weeks	Implementation

6. Chair

The panel will have co-chairs; George Michaelson and another yet to be appointed.

7. Members

The panel should include representatives from all areas of the community including:

- Consumers
- General domain name users
- Registrars
- ISP & Web Hosting entities
- Government

Panel membership will be limited to 30. auDA will issue a general invitation via the auDA members and discussion lists to interested parties to participate in the panel.

8. Operations and budget

Members of the panel will determine their method of operation. auDA will provide email list server, web site including archived submissions provided to the panel, documentation of work, will arrange meeting venues, and provide teleconference support for meetings. auDA also plans to provide resources to enable a consultant to carry out a substantial part of Stage 2.

auDA COMPETITION MODEL ADVISORY PANEL

Co-Chairs

Mr David Lieberman
Special Counsel
Blake Dawson Waldron

Mr George Michaelson
Technical Services Manager
Asia Pacific Network Information Centre

Members

Mr Rob Anderson
Director
cheapglobaldomains.com

Mr Philip Argy
Senior Partner
Mallesons Stephen Jaques (representing the
Australian Computer Society)

Dr Evan Arthur
Assistant Secretary
Department of Education, Training and Youth Affairs

Ms Sonja Bernhardt
Director
Thoughtware Pty Ltd

Mr Larry Bloch
Chief Executive Officer
Net Registry

Mr Alan Chalmers
Numbering Team
Australian Communications Authority

Professor Eugene Clark
Pro Vice-Chancellor
University of Canberra

Mr Roberto Colanzi
Senior Research Officer
Victorian Automobile Chamber of Commerce

Mr Matthew Hall
Partner
Deacons Lawyers (representing the Australian
Information Industries Association)

Mr Matthew Healy
Telecommunications Analyst
Australian Competition and Consumer Commission

Mr Tony Hill
Executive Director
Internet Society of Australia

Mr David Howarth
Solicitor
Freehills

Mr Geoff Huston
Chief Scientist, Internet
Telstra

Ms Amanda James
National Business Manager
AAP Information Services Pty Ltd

Mr Ian Johnston
Policy Consultant
Small Enterprise Telecommunications Centre Ltd

Mr John Lindsay
Strategic Development Manager
Internode Systems Pty Ltd

Mr Peter McGrath
Chief Operating Officer
connect.com.au

Mr Bill O'Chee
Director
B2G.com.au Ltd

Mr Jonathon Potter
General Manager, IT Services
Commonwealth Scientific and Industrial Research
Organisation

Mr Andrew Robertson
Chief Executive Officer
Tradegate Australia Ltd

Dr Bruce Tonkin
Chief Technology Officer
Melbourne IT Ltd

Mr Galen Townson
Western Australian Internet Association

Mr Andrew van der Stock
Senior Security Architect
E-Secure (representing the Systems Administrators'
Guild of Australia)

Ms Pauline van Winsen
Consultant

Ms Karina Warnest
Solicitor
Kelly & Co Lawyers

Ms Tania Wickman
Internet Consultant

GLOSSARY

Term	Definition
ACA	Australian Communications Authority
ACCC	Australian Competition and Consumer Commission
auDA	.au Domain Administration Ltd – the Australian body established by the Internet community to become the industry self-regulatory body for administering the .au ccTLD and its associated sub-domains, for the benefit of the Australian community
AUNIC	the database of domain name registrant contact details and WHOIS service for all .au domain names except those registered in asn.au, csiro.au and net.au.
TLD	Top Level Domain – a name at the top level of the global domain name hierarchy (eg. .com, .net, .uk)
ccTLD	country code Top Level Domain – in the global domain name hierarchy, all countries have been allocated their own top level country domain (eg. .au in Australia, .uk in the United Kingdom)
gTLD	generic Top Level Domain – names in the top level of the domain name hierarchy, other than the ccTLDs, where organisations can register directly (ie. .com, .net, .org, .edu, .gov, .mil)
2LD	Second Level Domain – a name at the second level of the domain name hierarchy (eg. microsoft.com, com.au, co.uk)
closed 2LD	a Second Level Domain that has a strictly limited community of interest (eg. csiro.au, edu.au, gov.au)
open 2LD	a Second Level Domain that is basically open to all users, subject to some eligibility criteria (eg. com.au, net.au, org.au)
data escrow	the practice of storing data in a secure, independent location for access by a third party under strictly limited circumstances (eg. if the custodian of the data goes out of business)
domain name	provides a means for a user to access a device on the Internet by using an easy to remember text name rather than a numerical Internet address
domain name licence	the licence to use a domain name for a specified period of time
DNS	Domain Name System
ICANN	International Corporation for Assigned Names and Numbers
IETF	Internet Engineering Task Force
IP address	Internet Protocol address (eg. 203.63.53.117)
ISP	Internet service provider
nameserver	provides a service to computers to resolve a domain name to a physical IP address
primary nameserver	provides the authoritative service for a particular level in the domain name hierarchy

secondary nameserver	providers some redundancy to the primary nameserver, so that if a computer is unable to reach the primary nameserver, it can query a secondary nameserver
P3P	Platform for Privacy Preferences Project (P3P), developed by the World Wide Web Consortium, is emerging as an industry standard providing a simple, automated way for users to gain more control over the use of personal information on web sites they visit
registrant	encompasses domain name licence holders, domain name licence applicants and their agents
registrar	an organisation that processes data on behalf of the registrant into the registry
registry	a database for a particular level of hierarchy in the DNS that contains all the domain names registered at that level and associated public information
reseller	a service agent for a registrar
RFC	Request for Comment issued by the IETF – the basis for official Internet standards
WHOIS	a protocol used to provide a public information service in relation to domain name data
zone file	a file that contains a mapping between each domain name in a domain zone (eg. com.au) and the address of a computer that can resolve the domain name to a physical Internet address

PERFORMANCE SPECIFICATIONS – DEFINITION OF TERMS

Service Availability. Service availability is defined as the time, in minutes, that the Registry's Services are responding to its users. Service is unavailable when a service listed in the Matrix is unavailable to all users, that is, when no user can initiate a session with or receive a response from the Registry ("Unavailability").

Service Availability is measured as follows:

Service Availability % = {[(TM - POM) - UOM] / (TM - POM)}*100 where:

TM = Total Minutes in the Service Level Measurement Period (#days*24 hours*60 minutes)

POM = Planned Outage Minutes (sum of (i) Planned Outages and (ii) Extended Planned Outages during the Service Level Measurement Period)

UOM = Unplanned Outage Minutes (Difference between the total number of minutes of Unavailability during the Service Level Measurement Period minus POM).

This calculation is performed and the results reported for each calendar month for Registry Database and Whois availability, and for each calendar year for Nameserver availability. Results will be reported to the Registrar Community via e-mail and to auDA.

Planned Outage. High volume data centers like the Registry require downtime for regular maintenance. Allowing for regular maintenance ("Planned Outage") ensures a high level of service for the Registry.

Planned Outage Duration. The Planned Outage Duration defines the maximum allowable time, in hours and minutes, that the Registry Operator is allowed to take the Registry Services out of service for regular maintenance. Planned Outages are planned in advance and the Registrar Community is provided warning ahead of time. This Performance Specification, where applicable, has a monthly Service Level Measurement Period. The Planned Outage Duration for the Registry Services is as follows:

Planned Outage Timeframe. The Planned Outage Timeframe defines the hours and days in which the Planned Outage can occur.

Planned Outage Notification. The Registry Operator must notify all of its Registrars of any Planned Outage. The Planned Outage Notification Performance Specification defines the number of days prior to a Planned Outage that the Registry Operator must notify its Registrars.

Extended Planned Outage. In some cases such as software upgrades and platform replacements an extended maintenance timeframe is required. Extended Planned

Outages will be less frequent than regular Planned Outages but their duration will be longer.

> Extended Planned Outage Duration. The Extended Planned Outage Duration defines the maximum allowable time, in hours and minutes, that the Registry Operator is allowed to take the Registry Services out of service for extended maintenance. Extended Planned Outages are planned in advance and the Registrar Community is provided warning ahead of time. Extended Planned Outage periods are in addition to any Planned Outages during any Service Level Measurement Period. This Performance Specification, where applicable, has a Service Level Measurement Period based on a calendar quarter.

> Extended Planned Outage Timeframe. The Extended Planned Outage Timeframe defines the hours and days in which the Extended Planned Outage can occur.

> Extended Planned Outage Notification. The Registry Operator must notify all of its Registrars of any Extended Planned Outage. The Extended Planned Outage Notification Performance Specification defines the number of days prior to an Extended Planned Outage that the Registry Operator must notify its Registrars.

Processing Time. Processing Time is an important measurement of transaction-based services like the Registry. The first three Performance Specifications, Service Availability, Planned Outages and Extended Planned Outages, measure the amount of time that the service is available to its users. Processing Time measures the quality of that service.

Processing Time refers to the time that the Registry Operator receives a request and sends a response to that request. Since each of the Registry Services has a unique function the Performance Specifications for Processing Time are unique to each of the Registry Services.

Processing Time Performance Specifications have a monthly Service Level Measurement Period and will be reported on a monthly basis. The Registry Operator will log the processing time for all of the related transactions, measured from the time it receives the request to the time that it returns a response.

> Processing Time—Add, Modify, Delete = 3 seconds for 95%.
> (i) Processing Time - Add, Modify, and Delete is applicable to the Registry Database as accessed through the registry/registrar protocol. It measures the processing time for add, modify, and delete transactions associated with domain names, nameservers, contacts, and registrar profile information.
> (ii) The Performance Specification is 3 seconds for 95% of the transactions processed. That is, 95% of the transactions will take 3 seconds or less from the time the Registry Operator receives the request to the time it provides a response.

> Processing Time—Query Domain = 1.5 seconds for 95%.
> (i) Processing Time - Query Domain is applicable to the Registry Database as accessed through the registry/registrar protocol. It measures the processing time for an availability query of a specific domain name.

(ii) The performance specification is 1.5 seconds for 95% of the transactions. That is, 95% of the transactions will take 1.5 seconds or less from the time the Registry Operator receives the query to the time it provides a response as to the domain name's availability.

Processing Time—Whois Query = 1.5 seconds for 95%.
(i) Processing Time - Whois Query is only applicable to the Whois. It measures the processing time for a Whois Query.
(ii) The Performance Specification is 1.5 seconds for 95% of the transactions. That is, 95% of the transactions will take 1.5 seconds or less from the time the Whois receives a query to the time it responds.

Processing Time—Nameserver Resolution = 1.5 seconds for 95%.
(i) Processing Time - Nameserver Resolution is only applicable to the Nameserver. It measures the processing time for a DNS query.
(ii) The Performance Specification is 1.5 seconds for 95% of the transactions. That is, 95% of the transactions will take 1.5 seconds or less from the time Nameserver receives the DNS query to the time it provides a response.

Update Frequency. There are two important elements of the Registry that are updated frequently and are used by the general public; Nameserver and Whois. Registrars generate these updates through the Registry Database. The Registry Database then updates the Nameserver and the Whois. These will be done on a batch basis

The committed Performance Specification with regard to Update Frequency for both the Nameserver and the Whois is 15 minutes for 95% of the transactions. That is, 95% of the updates to the Nameserver and Whois will be effectuated within 15 minutes. This is measured from the time that the registry confirms the update to the registrar to the time the update appears in the Nameserver and Whois. Update Frequency Performance Specifications have a monthly Service Level Measurement Period and will be reported on a monthly basis.

Update Frequency—Nameserver = 15 minutes for 95%.

Update Frequency—Whois = 15 minutes for 95%.

Cross-Network Nameserver Performance Requirements. Nameserver round-trip-time and packet loss from the Internet are important elements of the quality of service provided by the Registry Operator. These characteristics, however, are affected by Internet performance and therefore cannot be closely controlled by Registry Operator.

The committed Performance Specification for cross-network nameserver performance is a measured round-trip time of under 300 ms and measured packet loss of under 10%. Cross-network nameserver performance measurements will be conducted by auDA at times of its choosing, in the following manner:

The measurements will be conducted by sending strings of DNS request packets from each of four measuring locations to each of the nameservers and observing the responses from the nameservers. (These strings of requests and responses are referred to as a "CNNP Test".)

Each string of request packets will consist of 100 UDP packets at 10 second intervals requesting ns records for arbitrarily selected .au third-level domains, preselected to ensure that the names exist in the Registry TLD and are resolvable. The packet loss (i.e. the percentage of response packets not received) and the average round-trip time for response packets received will be noted.

To meet the packet loss and round-trip-time requirements for a particular CNNP Test, all three of the following must be true:

> The round-trip time and packet loss from each measurement location to at least one nameserver must not exceed the required values.

> The round-trip time to each of 75% of the nameservers from at least one of the measurement locations must not exceed the required value.

> The packet loss to each of the . nameservers from at least one of the measurement locations must not exceed the required value.

> Any failing CNNP Test result obtained during an identified Core Internet Service Failure shall not be considered.

> To ensure a properly diverse testing sample, auDA will conduct the CNNP Tests at varying times (i.e. at different times of the day, as well as on different days of the week). Registry Operator will be deemed to have failed to meet the cross-network nameserver performance requirement only if the nameservers persistently fail (see Section 3.6.3 above) the CNNP Tests with no less than three consecutive failed CNNP Tests to be considered to have persistently failed.