

ASX Australian Liquidity Centre



ASX

AUSTRALIAN SECURITIES EXCHANGE

Australian Liquidity Centre Location

The ASX Australian Liquidity Centre is located at:

Gore Hill Business Park
219-247 Pacific Highway
Artarmon, NSW, 2064

The location is 5km north-west of Sydney Central Business District (CBD).



Introduction

To meet the demands of ASX Participants and service providers for the lowest latency access to ASX Trade Execution and Information Services ASX will open its Australian Liquidity Centre (ALC) in November 2011. This purpose built, state-of-the-art data centre in Gore Hill, 5 kilometres to the north of the Sydney CBD will host all ASX Liquidity.

The ALC will allow ASX to greatly extend the availability of hosting services to ASX Participants and to begin to offer hosting services to vendors and the broader financial market community.

The diverse community of financial market players including Participants of both ASX and ASX 24 and vendors, including market information vendors (MIV's), Application Service Providers (ASP's), Independent Software Vendors (ISVs) and Network Service Providers (NSP's) located within the ALC will support efficient provision of support services across low latency internal networks and opportunities for business growth for all customers.

The ALC will be carrier neutral and allow customers to utilise the domestic and international Network Service Provider of their choice.

Co-location hosting enables members of the wider ASX community to place their infrastructure (such as proprietary trading equipment) within the same physical data centre as the ASX and ASX 24 primary matching engines. This enables the fastest possible access to market data and trade execution on ASX and ASX 24 markets.

The purpose of this document is to outline the key components of the ASX co-location service model for those customers looking to minimise latency or access the benefits of being part of this unique community.

Key Features of the ASX Australian Liquidity Centre

- Tier 3 specification
- All ASX Liquidity – ASX TradeMatch™, PureMatch™, VolumeMatch® and ASX 24
- A broad and diverse financial community
- 24 X 7 X 365 - access and security
- A flexible and scalable offering
- Access via existing ASX Net connection
- Carrier neutral

2

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Australian Liquidity Centre Features

The ASX Australian Liquidity Centre at Gore Hill has fully redundant infrastructure that is monitored and controlled in a central location by both automated systems and on site support staff.

Liquidity Access

The ASX Australian Liquidity Centre will house the matching engines of both ASX Trade and ASX Trade 24, this means that customers who place their infrastructure within the facility will achieve close to zero network latency a subset of overall latency.

A Broad Community

The facility will host a diverse range of financial market players such as:

- ASX Participants
- ASX 24 Participants
- Application Service Providers (ASPs)
- Broker Service Providers (BSPs)
- Independent Software Vendors (ISVs)
- Market Data Vendors (MDVs)
- Network Service Providers (NSPs)

ASX will facilitate connectivity between members of the community.

3

Power

The ALC draws its power from two separate power feeds coming into the building. The ALC is serviced by dual incoming HV (33KV) utility power supplies supporting a total power load of 3.5MVA on day one with the capacity to increase to 5MVA.

The ALC has three Diesel Rotary Un-interruptible Power Supply systems (DRUPS) installed. Each unit is capable of providing 1.6MW of power and supplies energy to the customer cabinets and associated plant and equipment. The DRUPS are installed in a distributed redundant configuration providing N+1 supply to all cabinets.

Power to plant and equipment servicing the data centre is fed from the DRUPS in a no-break configuration. This ensures continuity of supply to cooling systems if failure of the external power supply occurs.

A power reticulation system employs numerous localised sub distribution boards to segregate the computer room into manageable areas.

The diesel generators connected to the DRUPS systems are tested monthly.

Diesel tanks installed on-site have capacity for 72 hours of continuous running before refuelling is required.

Australian Liquidity Centre Features

Cooling

The ALC uses three 1.2MW air cooled chillers running in an N+1 configuration to support its cooling requirements.

The ALC is air-conditioned via 25 down-flow 90kW Computer Room Air Conditioner (CRAC) units. The data hall is on a raised floor and air is distributed using adjustable damper blade floor grills strategically positioned throughout the ALC raised area.

All chiller and CRAC infrastructure is supported on the DRUPS power configuration with no break to operation should the external electricity supply to the ALC fail. Chilled water buffer tanks are also installed to maintain the supply of chilled water during maintenance cutover of chiller systems.

All air conditioning systems are tested on a monthly basis.

Security

ALC security is controlled by a security token system. All doors are monitored for forced entry and "door open too long" alarms. Security Administration based on-site, controls and monitors the site security system 24 hours a day, 7 days a week, 365 days a year including cameras located in all access points and regular roving tours.

ALC customers (or individuals representing data centre customers) wishing to access the facility must have pre approved access and must be certified by ASX.

If access is required for works or general access an ASX Work Access Request Form must be completed (by nominated personnel with approval authority) providing details required under the ASX Australian Liquidity Centre Site Security Policy.

All ALC customers will have individually lockable cabinets to safely secure devices within the facility.

ALC customers and their nominated representatives will be prohibited from accessing any cabling that resides under floor or in the above cable trays within the facility.

4

¹"Works" means supplying, affixing, erecting, installing, connecting, maintaining (other than low level), moving, repairing or replacing Equipment (including telecommunications equipment), or removing any Equipment and all matters incidental thereto, including, without limitation alterations to the infrastructure of the Data Centre or Building in which the Data Centre is located, installation of cabling, cabinets.

²"General Access" means inspecting the state of repair of the Equipment installed within the Data Centre, low level maintaining, backing up and monitoring of the Equipment.

Australian Liquidity Centre Features

Fire Protection

Fire control within the ALC includes:

- Gas suppression and a dry pipe sprinkler system.
- Very Early Smoke Detection Apparatus (VESDA) will also be installed.
- All fire systems are tested monthly.

Under Floor Water Detection

Under floor monitoring systems have been installed to detect water leaks. The system is connected to the facility BMS system which will display in metres where the fault is located. ALC water detection systems consists of spot detectors located under each process cooling unit and an additional set of wet string detectors along the sub floor.

Environment Control

All aspects of the ALC computer room environment including temperature, humidity, air conditioning, fire systems, water under floor, power systems are all monitored by a central system. Any alarms from these devices are passed to the monitoring system for action by ASX.

Cabling

Cabling to customer cabinets will be ASX provided as a:

- Fibre connection; and
- UTP Cat 6 standard.

The required User termination will be dependent on the service being utilised.

The cables supporting each ASX service will be of the same length to facilitate neutrality within the facility.

Telecommunications

The ALC has 2 separate "Meet Me (carrier) Rooms", each with cable routes via fully diverse access paths.

Cabling from the "Meet Me Rooms" to the customer's environment is provided by fibre or copper via diverse communications risers.

Customer Dedicated Cabinets

Service Offering Elements	Details
Cabinet Specifications	<p>Full 46RU x 1100mm deep and 800mm wide with a 6 port fibre patch panel and a 6 port UTP patch panel.</p> <p>Front and rear doors are a standard 80% free air mesh door (excluding cabinet surround). Perforations limit the visibility in the cabinets.</p>
Cabinet Locking	<p>Electronic locking solution in all cabinets. Solution shall include:</p> <ul style="list-style-type: none"> • Electronic locking mechanisms • Remote access control • Access monitoring and reporting • Management and logging software on centralised server.
Cabinet Power	<p>Cabinets will have a default allocation of 2kW power. Additional power can be purchased in increments of 2kW up to a maximum allocation of 6kW per cabinet.</p> <p>2 x vertical power rails connect to separate A & B feeds per equipment cabinet with the following specifications:</p> <ul style="list-style-type: none"> • 32A/230V unmetered power rails • Support 20x C13 IEC Outlets and 4x C19 IEC Outlets <p>Redundant power supply based on separate GPOs and PDUs.</p>
Power Monitoring	<p>Power monitoring will be available for all dedicated cabinets. Power Distribution Unit (PDU) recording at the 32 Amp circuit level.</p> <p>Review process required to capture over utilisers.</p>
Inter Cabinet Configuration	<p>Customers with multiple cabinets side by side will have the ability to patch devices between cabinets by removing the common cabinet panels. The common cabinet panels (gland plates) are accessed from within each cabinet. The removed cabinet panels must be left with the Liquidity Centre operations staff.</p>
Cabinet Availability	<p>Customers may have the option of reserving cabinets next to their existing allocation (if available). The option is for 6 months and can be exercised at any time prior to expiry.</p>
Term of Contract	24 months

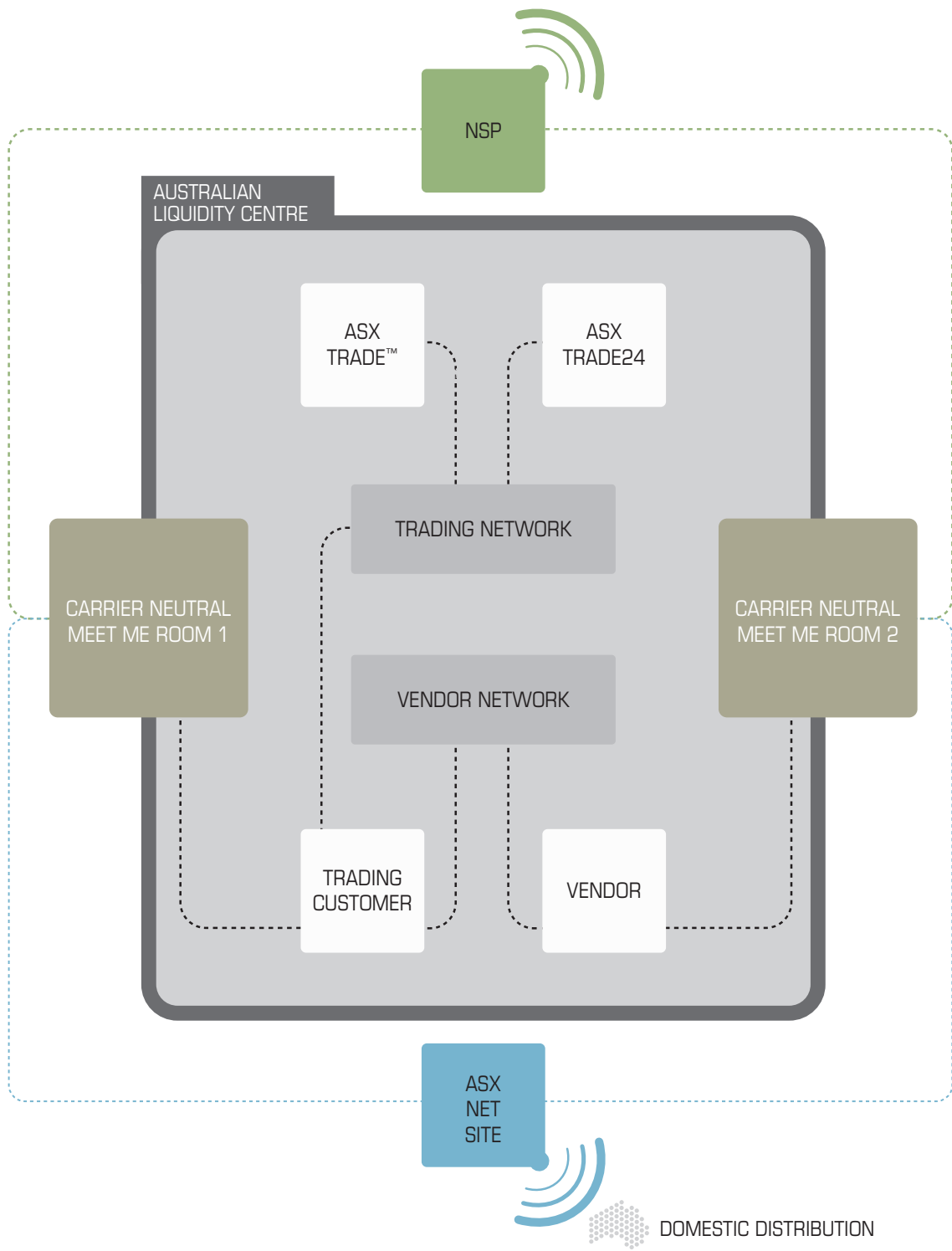
Telecommunications

ASX offers customers connectivity between external domestic sites and the ALC via its low latency fibre network, ASX Net.

The ALC is a “carrier neutral” data centre which means that customers can use the carrier of their choice to connect to external sites including domestic and global liquidity sources.

Network Service Providers (NSPs) will be able to terminate their connections into two “Meet Me Rooms” offering diverse entry points into the ALC.

ASX will facilitate redundant cross connects from NSPs to customer dedicated cabinets.



Additional Liquidity Centre Services

A Goods Receipt and Storage Service

Packaging Disposal Service

Initial Cabinet Set-up and

Equipment Installation

Server and Network Technician Support Services

Scheduled and Expedited Remote Hands

Roof Space for Antennae to facilitate precision timing

Possibility of Caging for Customer Cabinet Space

WiFi Internet Access

Contact Information

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