



Delivering GNSS Products to End Users

Neil Ashcroft

Leica Geosystems

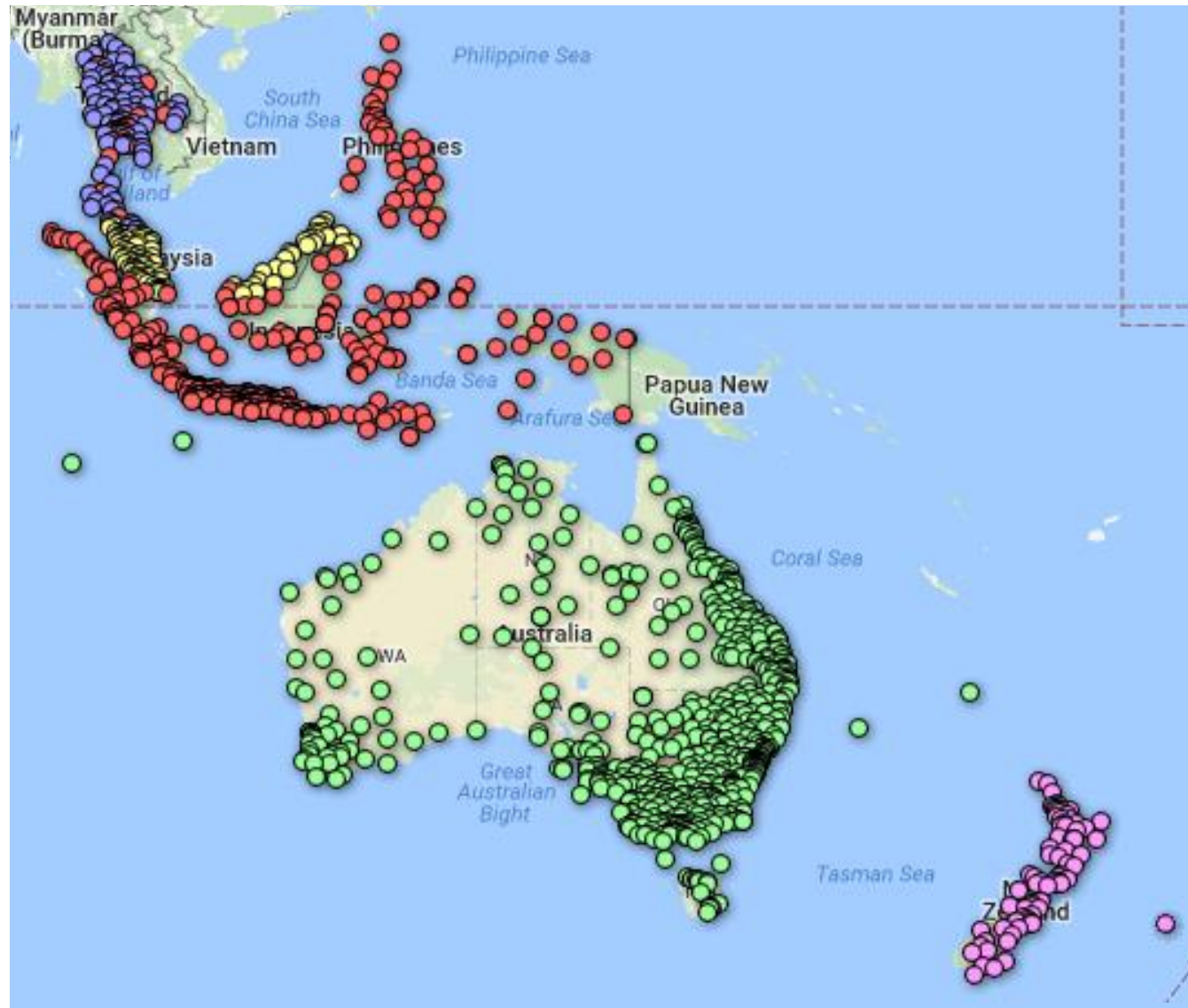
APAC GNSS Reference Station Manager

ASEAN, ANZ, JAPAN, KOREA

“Known” GNSS Infrastructure

Streaming 1sec Obs
Generating RINEX

ASEAN & ANZ
>1000 Stations

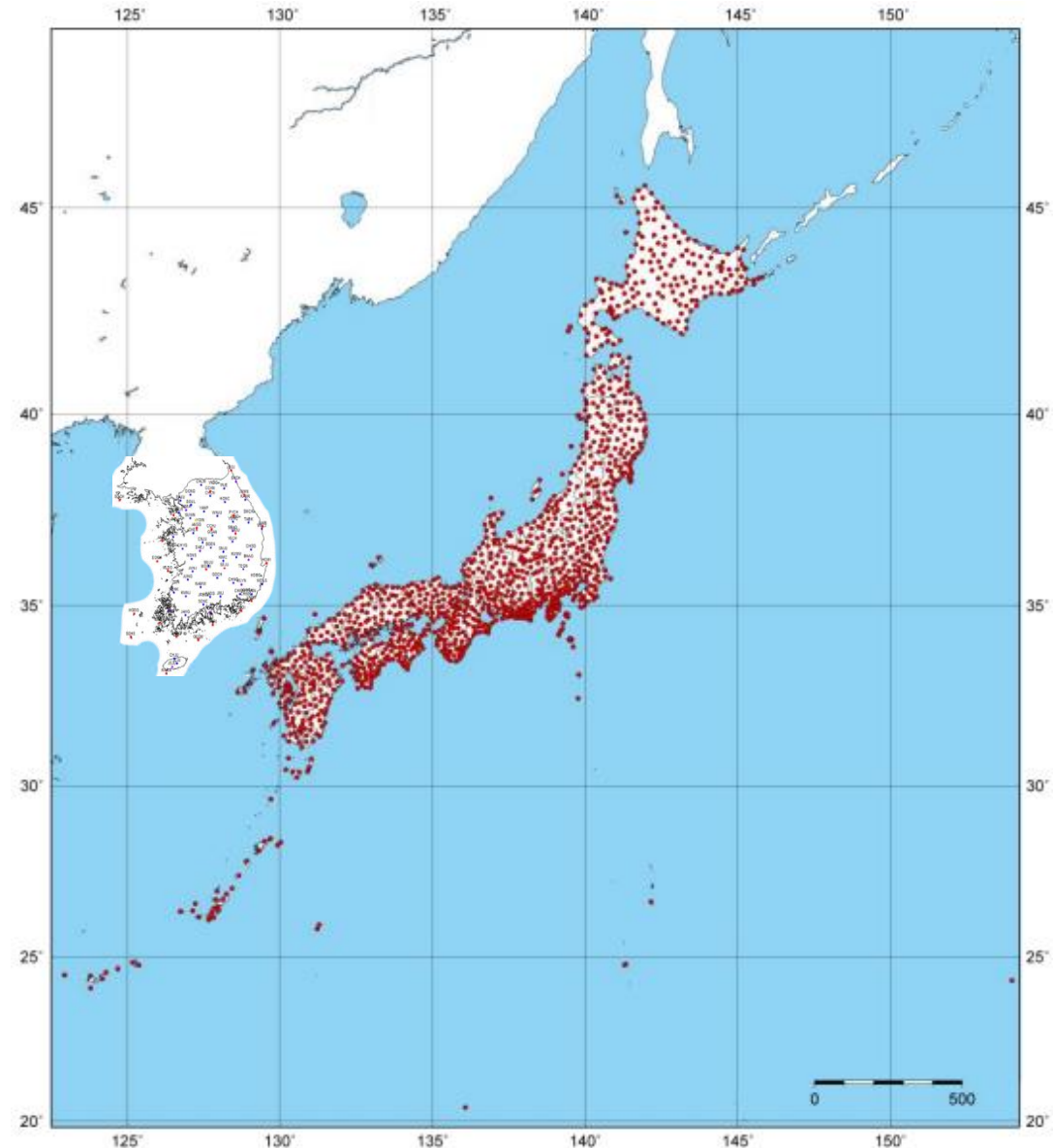


“Known” GNSS Infrastructure

Streaming 1sec Obs
Generating RINEX

ASEAN & ANZ
>1000 Stations

JAPAN & KOREA
>1700 Stations



The GNSS Infrastructure will deliver these Data Products:



- **POST-PROCESSING (RINEX)**

- 30 second files to support long term positioning
- 1 second files to support post-processed kinematic surveys



- **REAL-TIME (RTCM)**

- Single Base Corrections
- Nearest Base Corrections
- Network RTK Corrections
 - MAC,VRS,FKP



- **SYSTEM STATUS**

Mechanism to deliver these Data Products:



- **POST-PROCESSING (RINEX)**

- Via FTP Sites or WEB Sites



- **REAL-TIME (RTCM)**

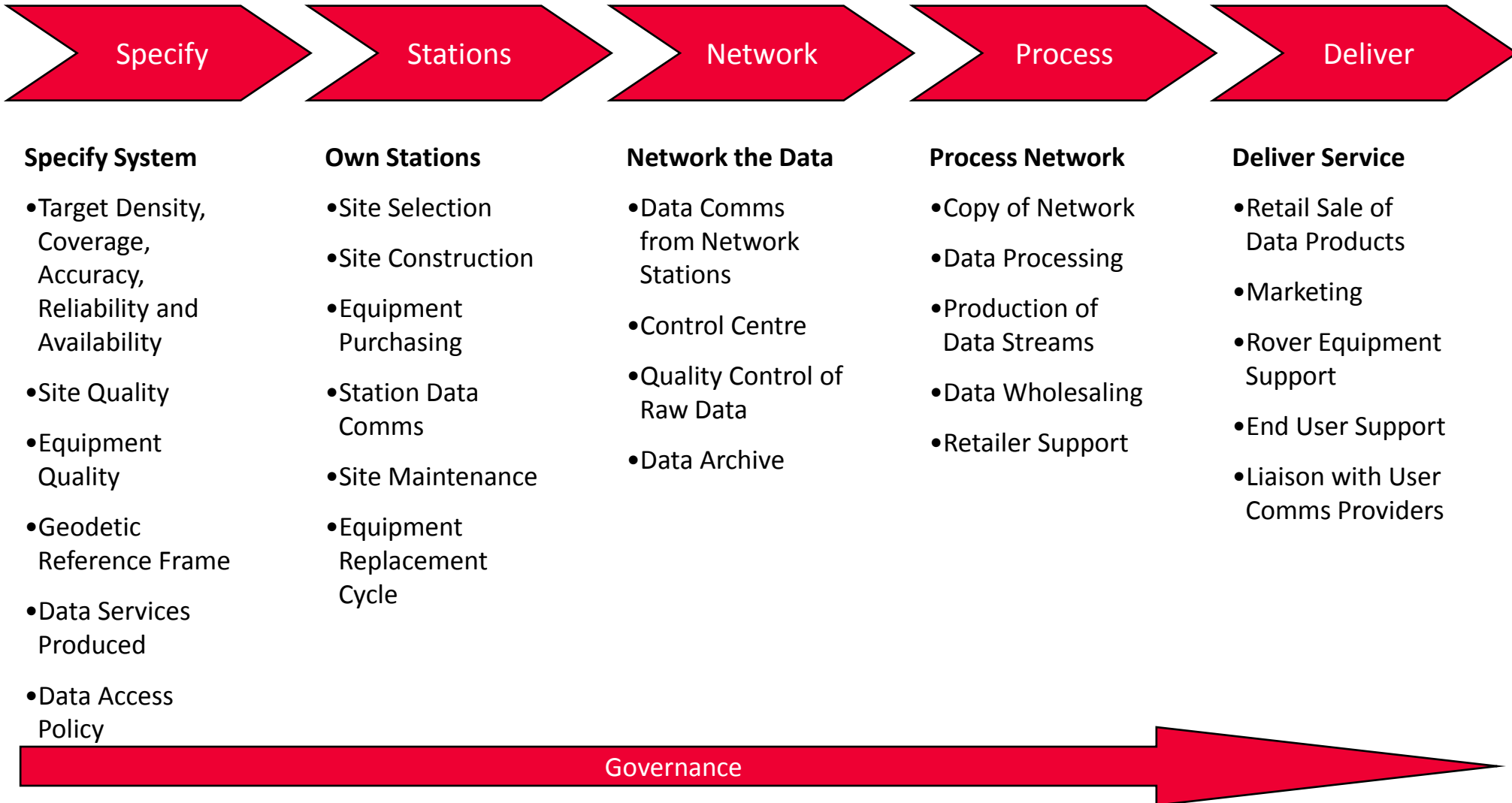
- Via NTRIP Casters



- **SYSTEM STATUS**

- Via WEB Sites or Mobile Phone Apps

The “Higgins” Model

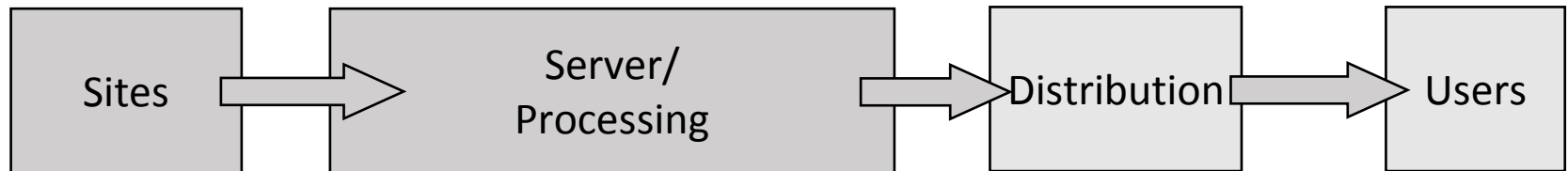


Courtesy of M.Higgins, DNRM, QLD, Australia

FIG Vice President (2007-2010)

FIG Commission 5 Chair (2003-2006)

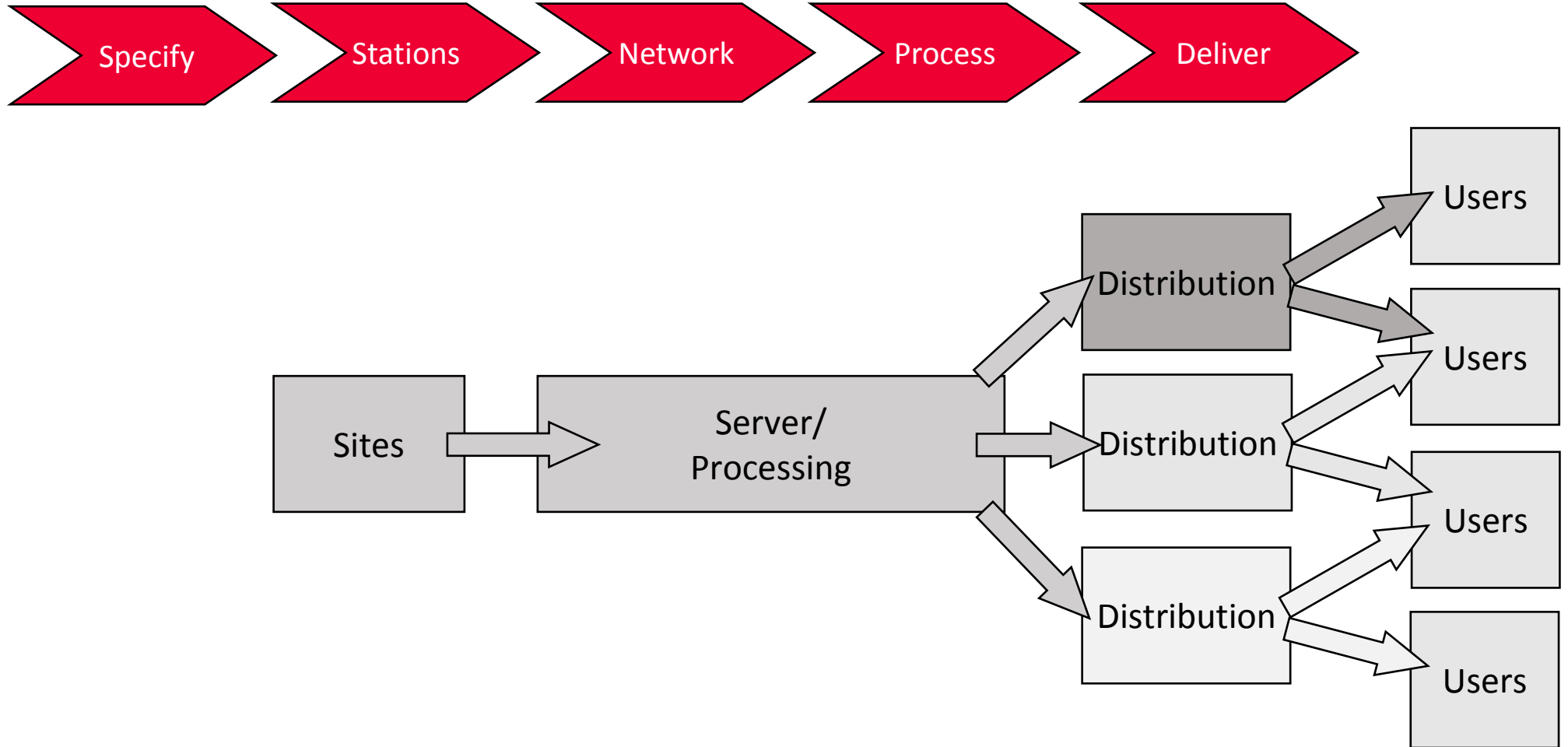
Business Models



Grow the User Base

Grow the Incoming Revenue Base

Business Models



Business Models - Revenue

Users are willing to pay for a Service

for example Telecommunications companies

Japan   SoftBank 

S Korea   

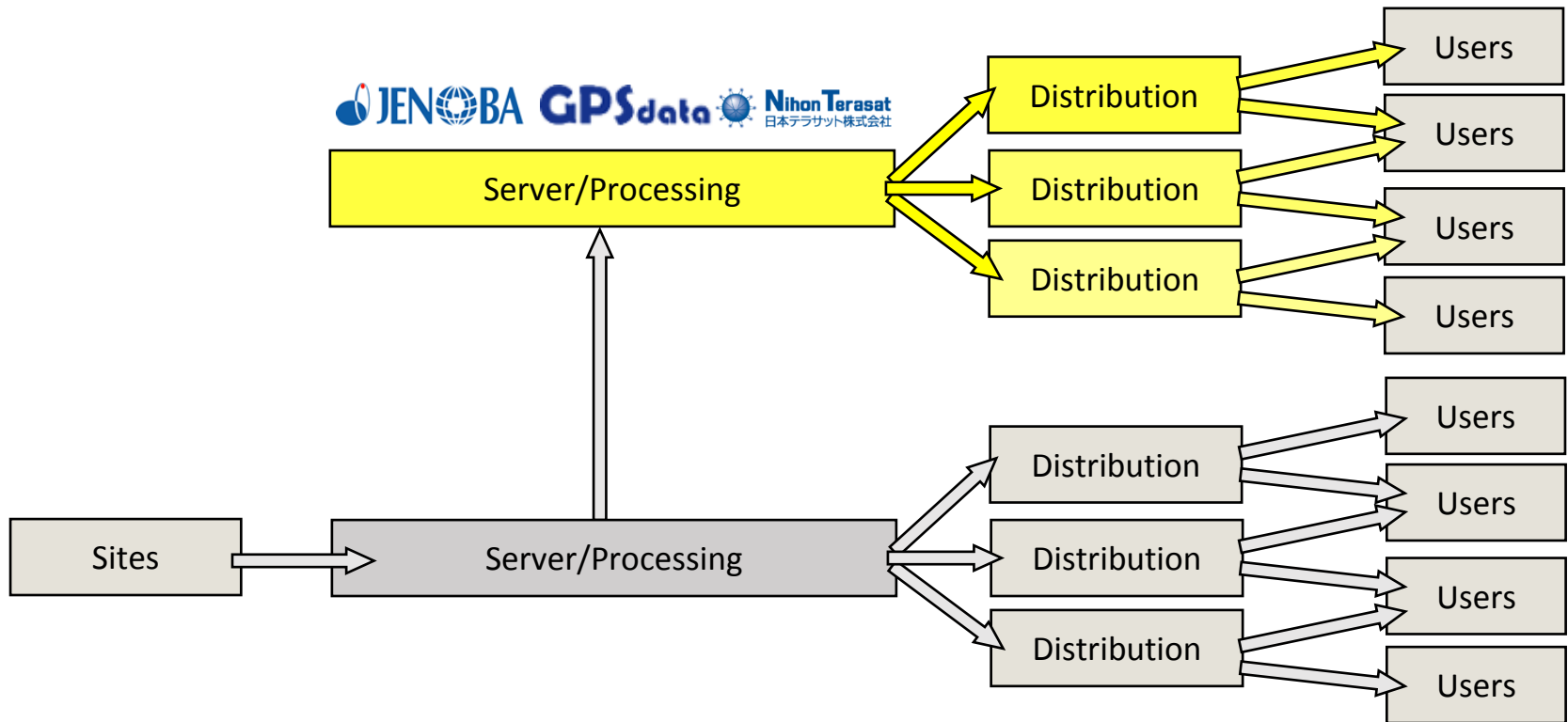
Australia   

Singapore   

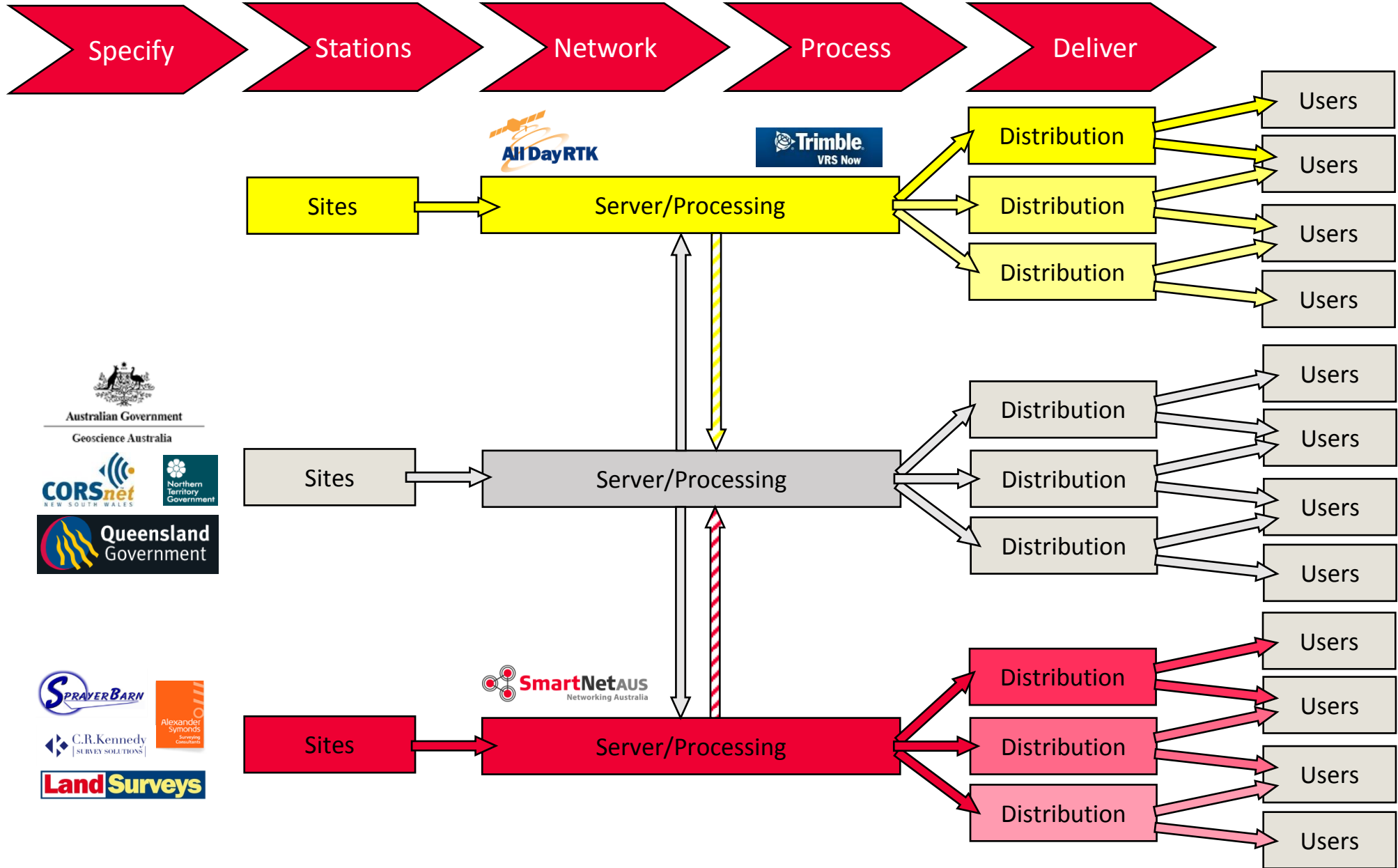
Competition is healthy and drives innovation

Consider appointing additional GNSS Data Service Providers

Business Models – Data Flow

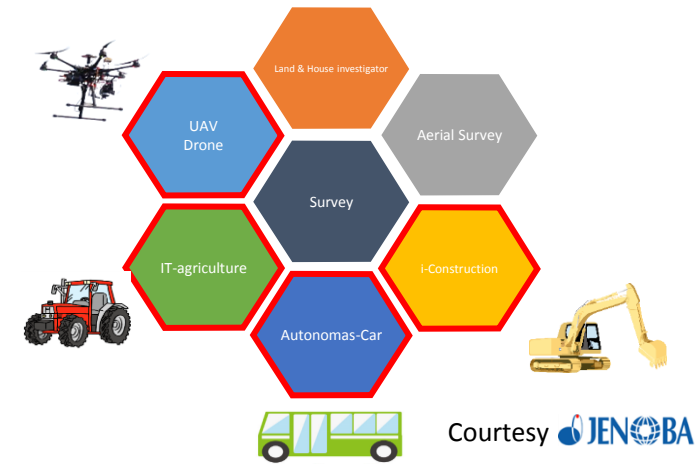


Business Models – Data Flow

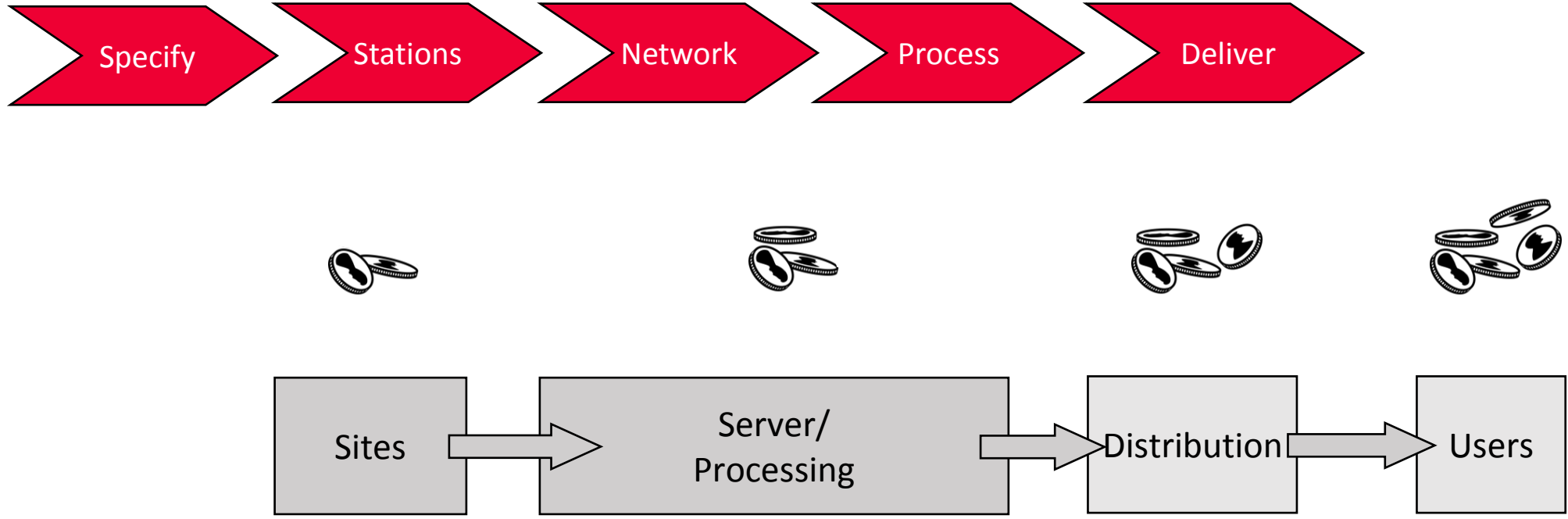


Each Service Provider will provide unique Service offerings:

- Temporal Licenses
 - Timed Licenses
 - Annual, Monthly, Daily, Hourly
 - Quantitative Licenses
 - Epochs, Seconds, Minutes, Hours
- Spatial Licenses
 - National, Regional, Local
- Accuracy Specific Licenses
 - DGPS, PPP, RTK, nRTK
- Application Specific Licenses
 - Survey, Construction, Agricultural, Intelligent Transportation, Airborne
- Support Services
 - All in one Mobile Connectivity and GNSS Data Provision



Business Models - Revenue



Grow the User Base

Grow the Incoming Revenue Base

Share the Revenue with:

Distributors, Service Providers and Operators

It's in **EVERYONES** interest to maintain the SITE infrastructure

Examples of Revenue models for SITE Owners/Operators

- Free model : Use as is. No guarantees, no support
- Fixed fee : Recover operational and depreciation costs
 - Staged based Targets for Resellers. Higher initial payments but significantly reduced when targets are reached
- Royalty model :
 - Percentage of User Fees, irrespective of Usage, OR
 - A Percentage of User Fees, based upon Users actual usage of Sites.

Thank you

Neil ASHCROFT

Leica Geosystems

SINGAPORE

E: neil.ashcroft@leica-geosystems.com

T: +65 6511 6511

M: +65 9889 8377