



# ALOS Data Distribution Mechanism

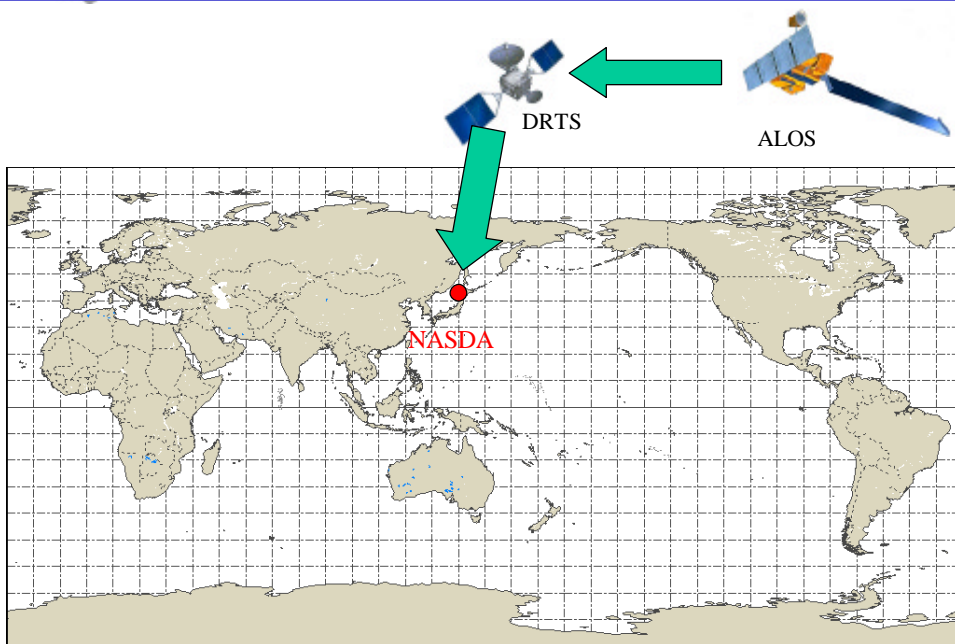
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KOJI TERADA

Office of Earth Observation Systems



## Data Capture





## ALOS Data Distributing Mechanism

### *Distribution for PIs*

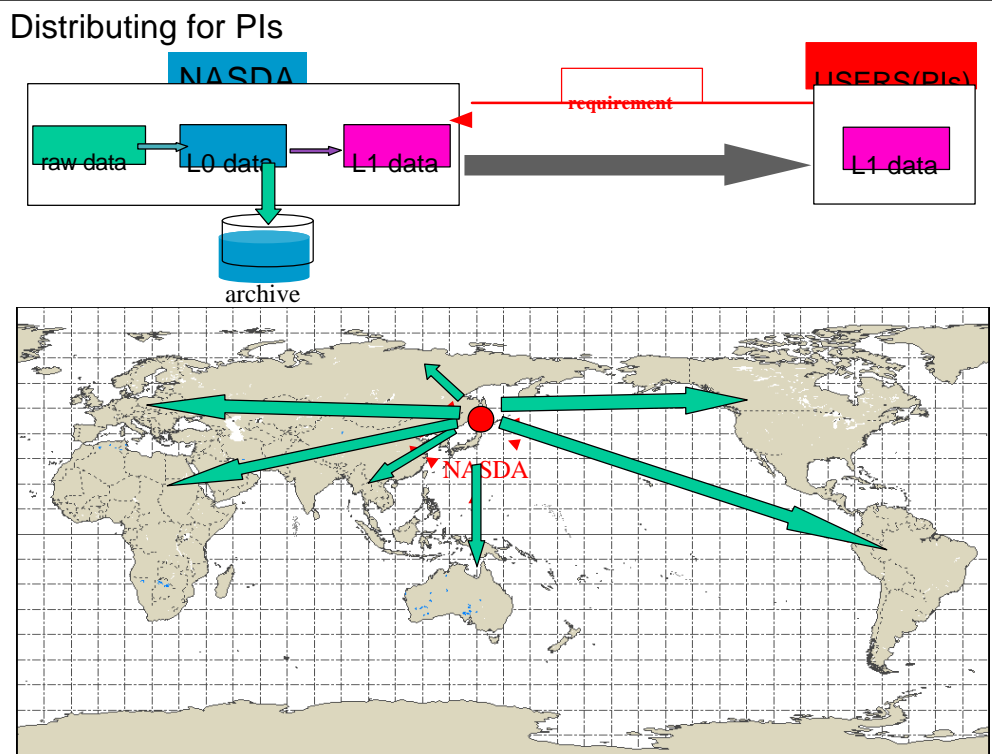
### *Distribution for general users*

Regional data distribution

Inter-node data distribution

Non-Commercial use distribution

Commercial use distribution





## Introducing ALOS Data Node Concept

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### Purpose of ALOS Data Node

Background of the ALOS Data Node; why the concept was introduced:

The size of the ALOS data downlinked per day will amount to 1TB.

It is desirable to promote the world-wide utilization of ALOS data, that is high resolution and has the global coverage.

It is beneficial to promote the maximum ALOS data utilization with the minimum interface coordinated efforts.

Purpose of the ALOS Data Node:

To optimize the benefits of the ALOS data through the international cooperation

To promote application and earth science studies

To accelerate the practical use of ALOS data

To enhance the global user service by constituting the distributive world-wide ALOS data center



## Overview of ALOS Data Node

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### Definition of the ALOS Data Node

- One representative organization in each region and cooperative space organizations (including the data distributors).
- Responsible for receiving the regional level-0 data from NASDA.
- Process and Provide the regional level-1 data upon the requests from the data users, including NASDA.

CNES for Europe and Africa area

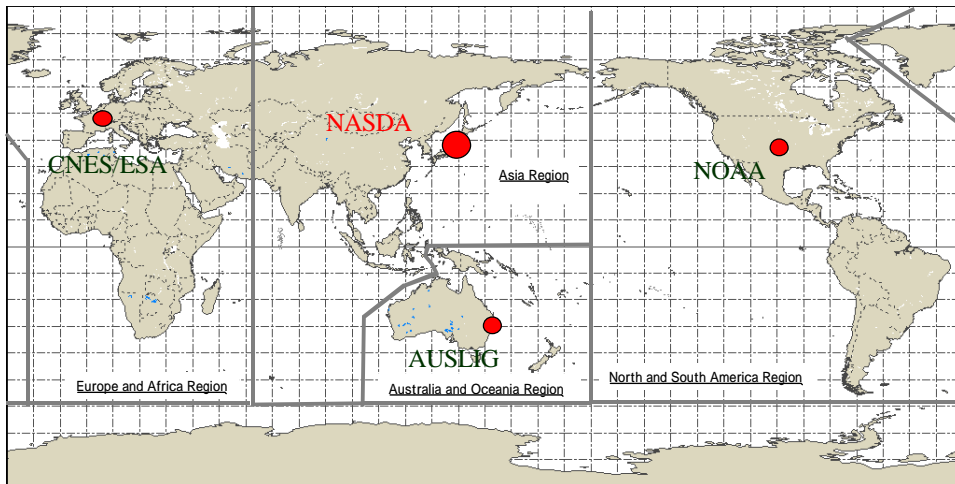
NOAA for North and South America area

AUSLIG for Australia and Oceania area

NASDA for Asia area and Antarctic area



## Definition of the ALOS Data Nodes



Geographical Distribution of the ALOS Data Nodes



## Expected roles of the ALOS Data Node

### Data center function

- Take the level-0 data of the responsible region regularly from the Earth Observation Center (EOC) of NASDA mainly by media. (ex. every week (TBD))
- Archive the level-0 data for 5 years following launch (ALOS mission life).
- Generate, archive and distribute the level-1 data to users.
- Provide user service (e.g. order desk, and help desk function).
- Receive and coordinate the operation request (observation request) from the regional users.

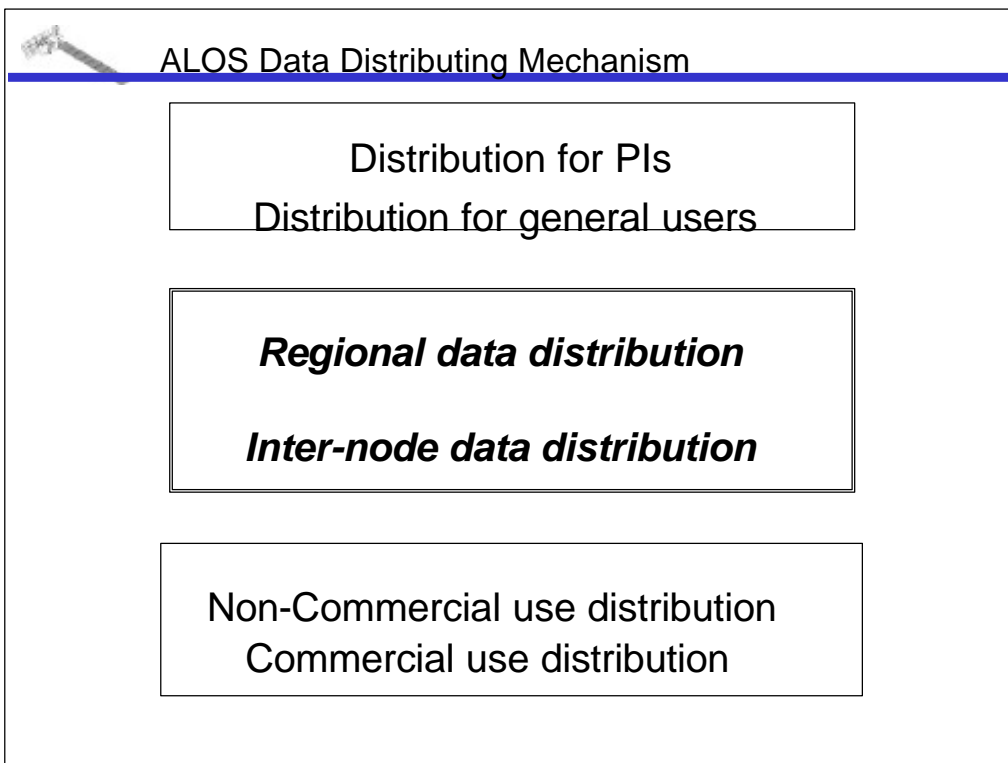
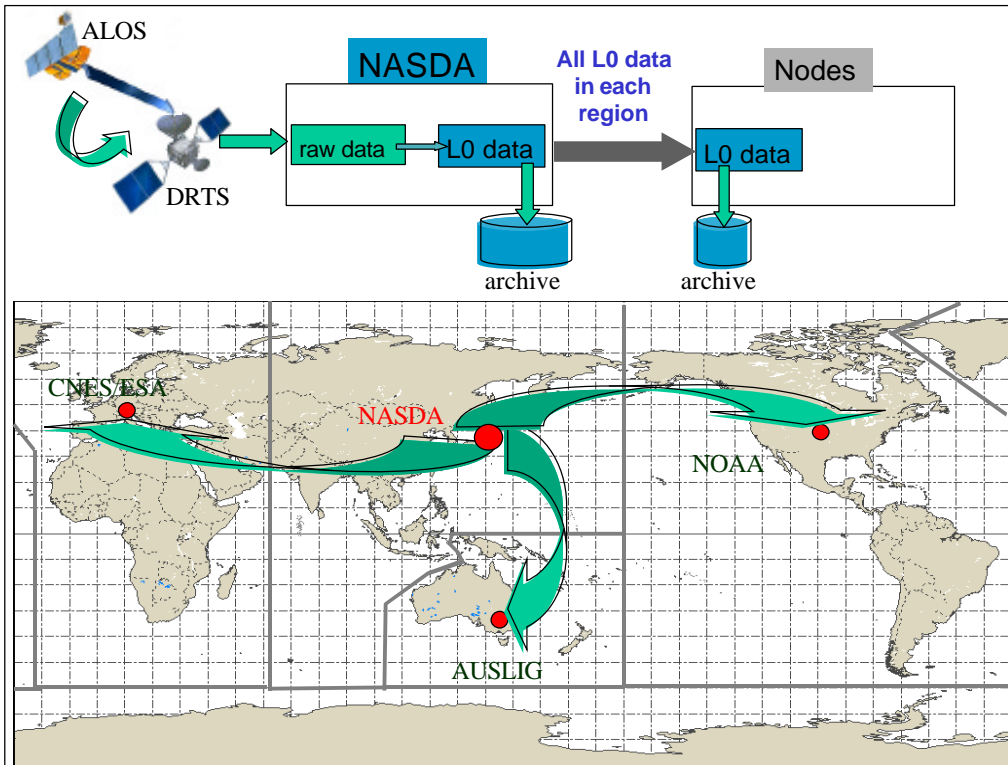
### Scientific Research function

- Utilize the ALOS data for its own research.
- Issue the announcement of the opportunity of the research to the regional users (TBD) .

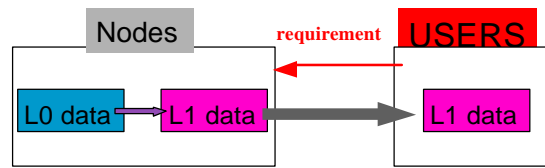
### Joint activities

NASDA and the ALOS Data Nodes make the best efforts to cooperate in the following areas.

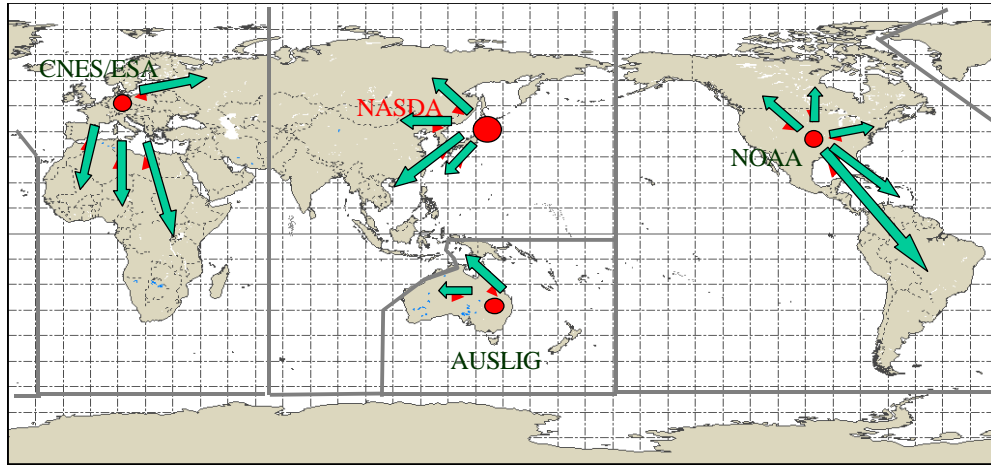
- Symposium / workshops
- Joint research announcement (TBD)
- Algorithm development for the higher level data (TBD)
- Validation campaigns (TBD)



## Distributing for General Users



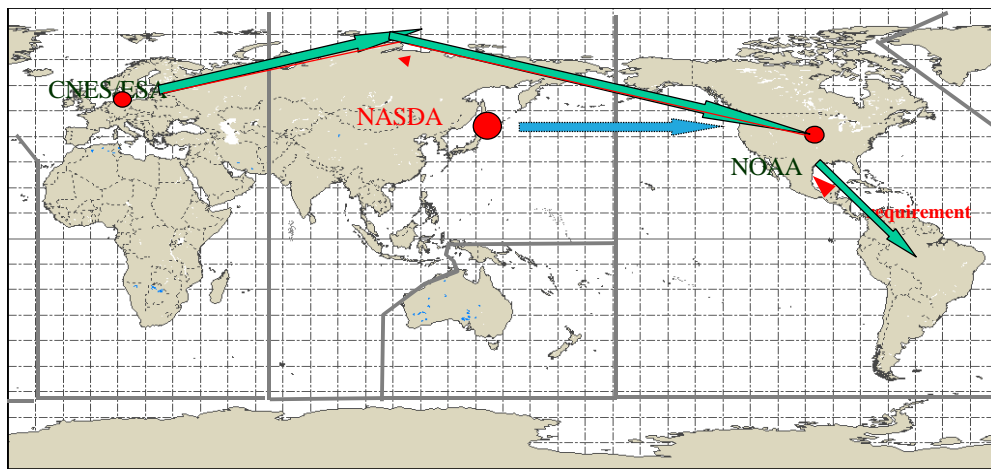
### Regional data distribution



## Mechanism of Inter-node distribution

*American user requires European data*

### Inter-node data distribution





## ALOS Data Distributing Mechanism

- Each Node has responsibility for provision of Level 1 products to any client in its zone  
各ノードは、ノードがカバーする各地域のユーザに対しレベル1 データを提供する責任を負う
- Each Node shall designate its commercial distributor(s)  
各ノードは、商業配布機関を選定する
- To ensure a “single point of request” scheme for all users shall require inter-Node data exchange (so that users may request out of zone data from their regional Node)  
ノード機関間のデータ交換を行うことにより、すべてのユーザに対して「単一窓口」となるようなスキームを実現する。
- The definition of user category (commercial vs non-commercial) is at the discretion of the relevant Node (商業vs非商業)のユーザカテゴリの定義は、各ノードで決定される
- Distribution in a given zone of any Level 1 data, for any use – whether commercial or non-commercial - shall be under the direction of the relevant Node.  
各担当地域のレベル1 データの配布は - 商業配布 / 非商業配布によらず - 各ノードの方針に従う
- In the event of inability of a Node to fulfill an inter-node request for Level 1 data, NASDA may fulfill the request with either Level 0 or Level 1 data  
ノードがノード間のレベル1 データの要求に応じられない場合は、NASDAがレベル0 またはレベル1 データの提供に応じることができる



## ALOS Data Distributing Mechanism

- Each Node shall have the responsibility to monitor its commercial distributor(s) to ensure a suitable level of service. In the event of service failure, NASDA and the Nodes shall discuss corrective actions.  
各ノードは、それぞれの商業配布機関が適切なレベルでサービスを確実にしていることをモニターする責任を負う。適切なサービスを行っていない場合は、NASDAと当該ノードにより調整を行い対処する

### Pricing Policy

For commercial use, each of the Node distributors is free to establish its own pricing policy (within a range to be agreed with NASDA and its prime distributor)  
商業利用については、各ノード配布機関は、(NASDA及び主配布機関の合意の範囲で)自らのポリシーで自由に配布することができる

- For non-commercial use, data shall be distributed directly by the Node at a fair and marginal cost.  
非商業利用については、データはノードから直接公正かつマージナルコストで配布される
- The definition of “fair and marginal” shall be agreed with NASDA, and the fair and marginal cost for each zone shall be set by each Node – according to regional policies and economics.  
「公正な (fair) かつマージナル (marginal) 」な価格の定義は、NASDAとの合意に基づき、それぞれの地域の政策と経済に従って各ノードによって定められる



## ALOS Data Distributing Mechanism

Distribution for PIs  
Distribution for general users

Regional data distribution  
Inter-node data distribution

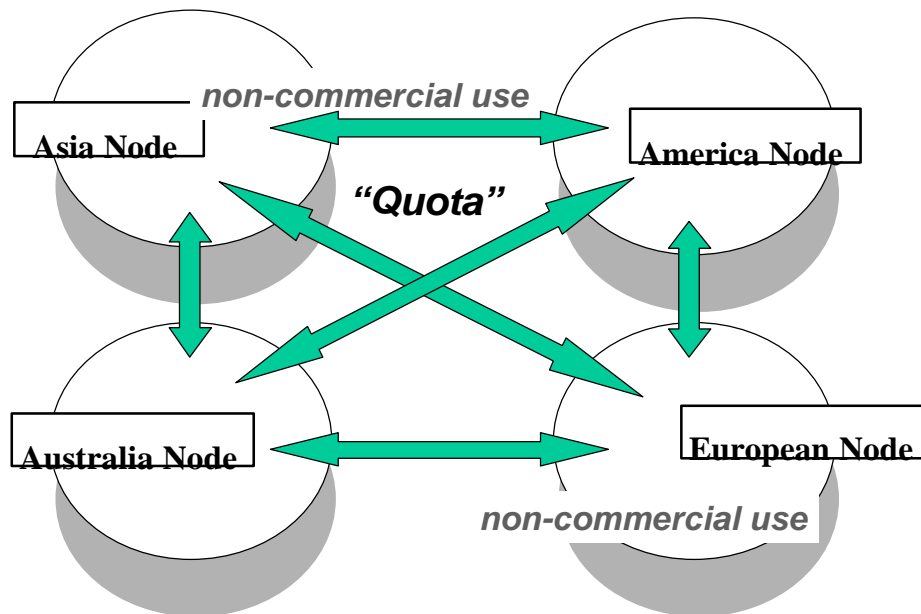
***Non-Commercial use distribution***

***Commercial use distribution***



## Mechanism of Inter-node distribution

non-commercial use

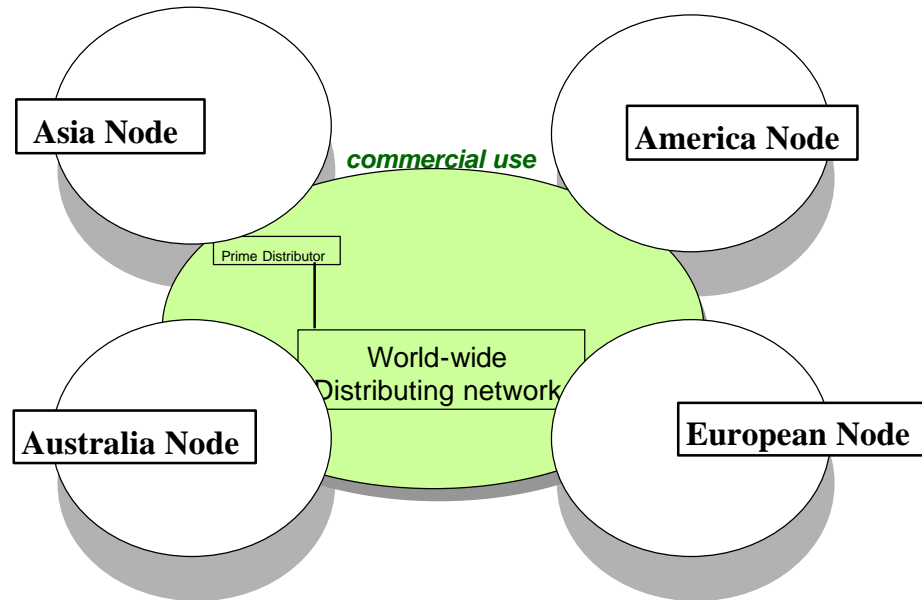






## Mechanism of Inter-node distribution

Commercial use



## Role of Prime distributor (Draft)

- Organize the inter-node data distribution network for commercial use by means of the agreement with each distributor respectively  
主配布機関は、商業利用のためのノード間データの配布ネットワークオーガナイズし、各データ配布機関と協定を締結する
- The prime distributor does not distribute regional data to the regional users directly  
主配布機関は、各地域のデータを直接その地域には配布しない
- The distributors may order data outside its node for commercial use to the prime distributor  
主配布機関は、商業利用の場合、他の地域のデータのオーダーを受け付ける



## Direct Data Reception

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### Direct Data Reception

#### - Basic Policy of the ALOS data reception

NASDA will receive all (world-wide) ALOS data at the EOC using Data Relay Test Satellites (DRTS).

If any ALOS Data Node or ground station requests to receive the ALOS data by the direct transmission system (X-band system), NASDA will coordinate the ALOS Data Nodes and ground station about direct ALOS data reception to the extent that nothing interferes with proper ALOS mission under the framework of the ALOS Data Node's activities.

#### - Option of ALOS direct data reception

i) AVNIR-2 data reception;

ii) Degraded PALSAR or PRISM capture (The quality of the data is degraded)

iii) Half speed playback data reception with Data Recorder

*\*Usually I) is the primary option*



## NASDA / Asian Data Node

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### Fundamental Data Policy

- NASDA should provide data as cheap as possible
- Data should be used for only peaceful purpose
- Value/service added Data can be sold without specific restriction



## Conclusion

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### Next Step

#### **Implementing ALOS Data Nodes**

- Establishing data policy  
Pricing Policy, inter-node exchange rules (quota)
- Establishing acquisition request scheme  
based upon the results of the mission simulation
- Establishing quality monitoring guideline

#### **Establishing Asian Node (Data Promotion Center)**

- Concept study
- implementation