

GPE vs. CGSP



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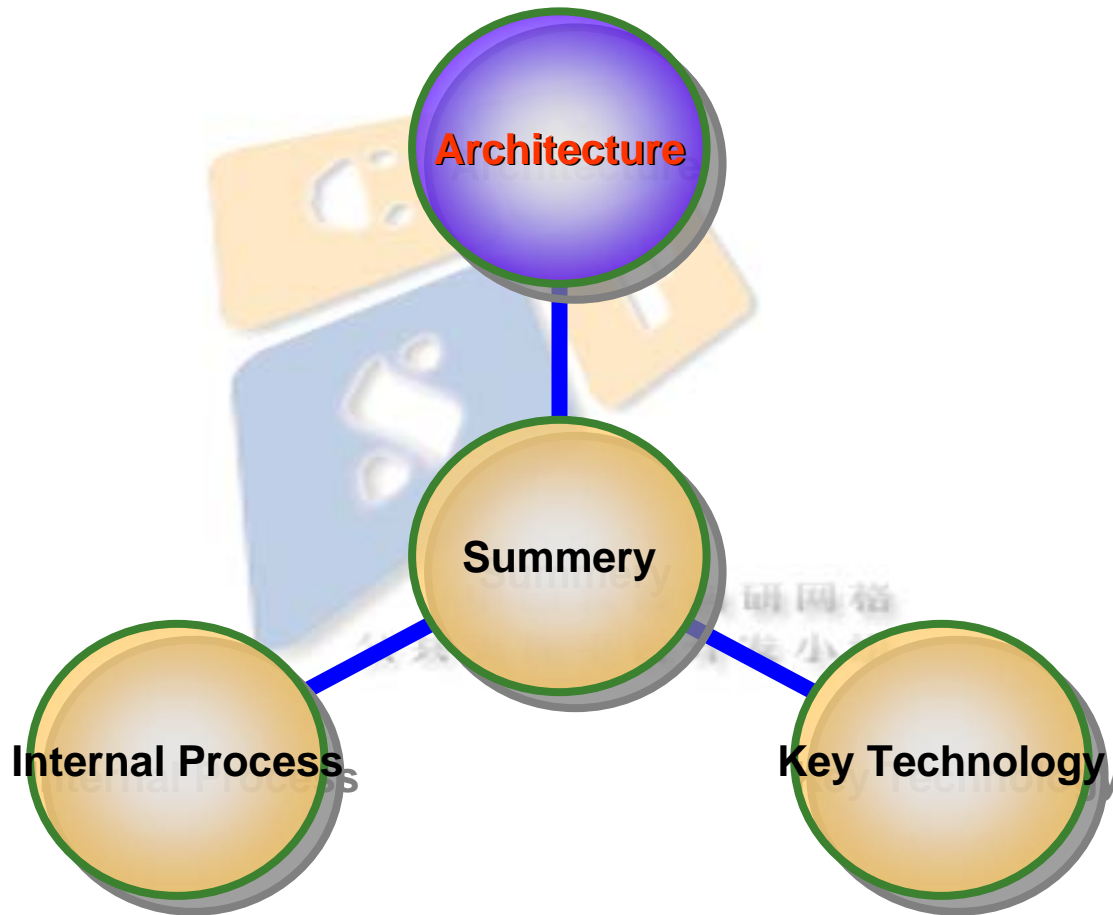
Acknowledgement

- Thanks for Intel providing related document
 - Logo  marked in the right corner stands for that page is cited from Intel's Document
- Thanks for the teammates of CGSP

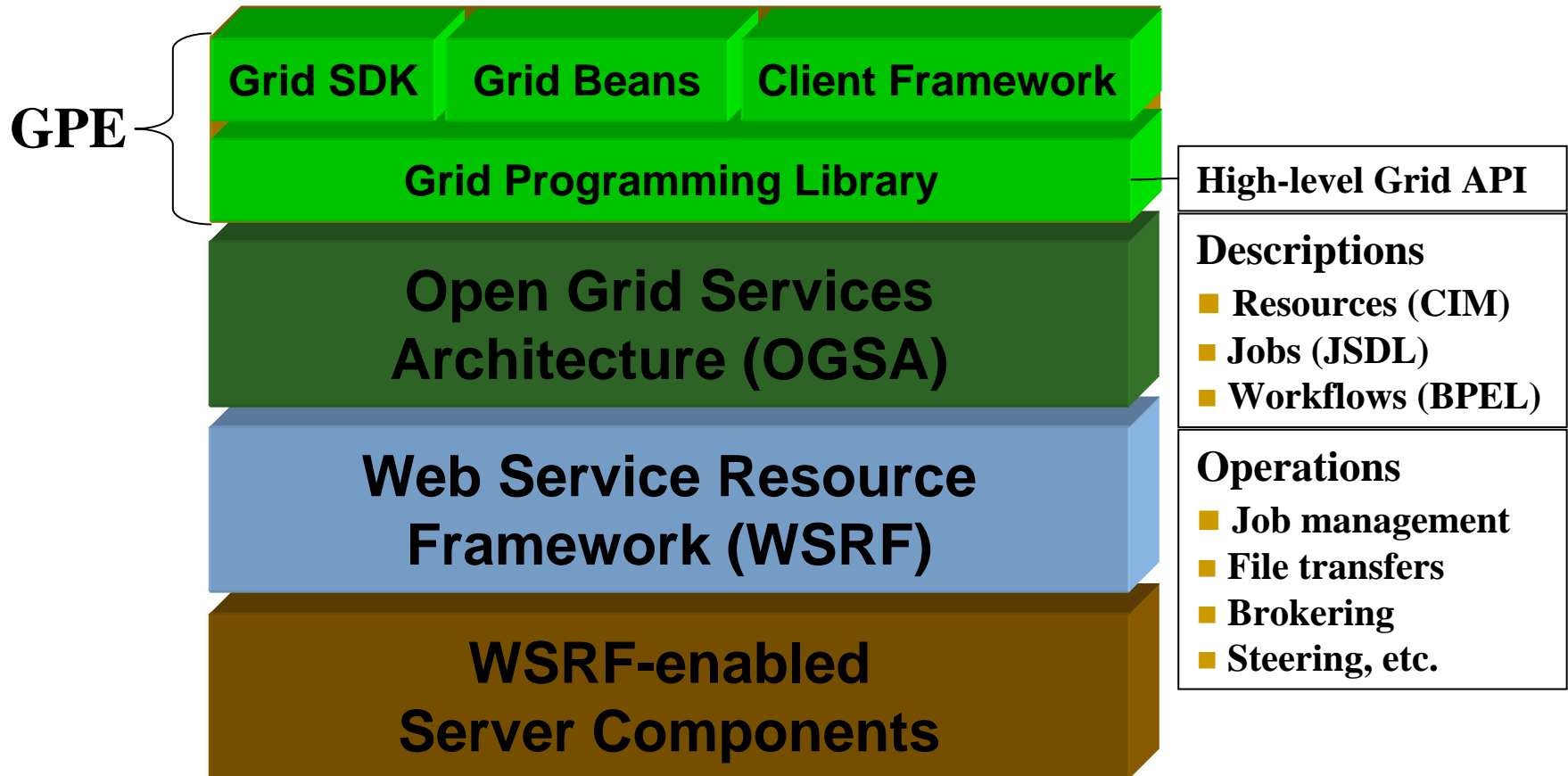


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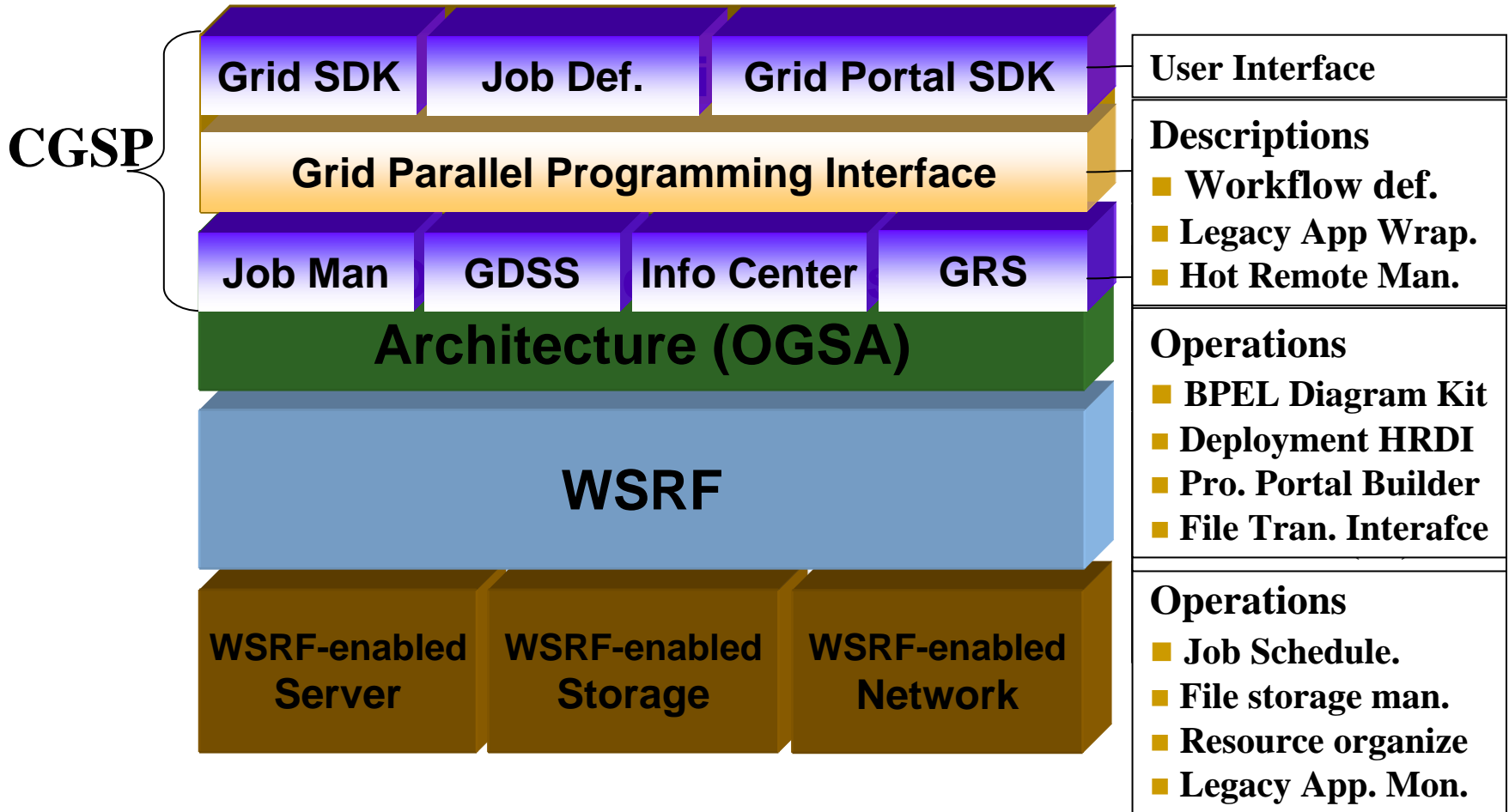
GPE vs. CGSP



Architecture-GPE



Architecture-CGSP

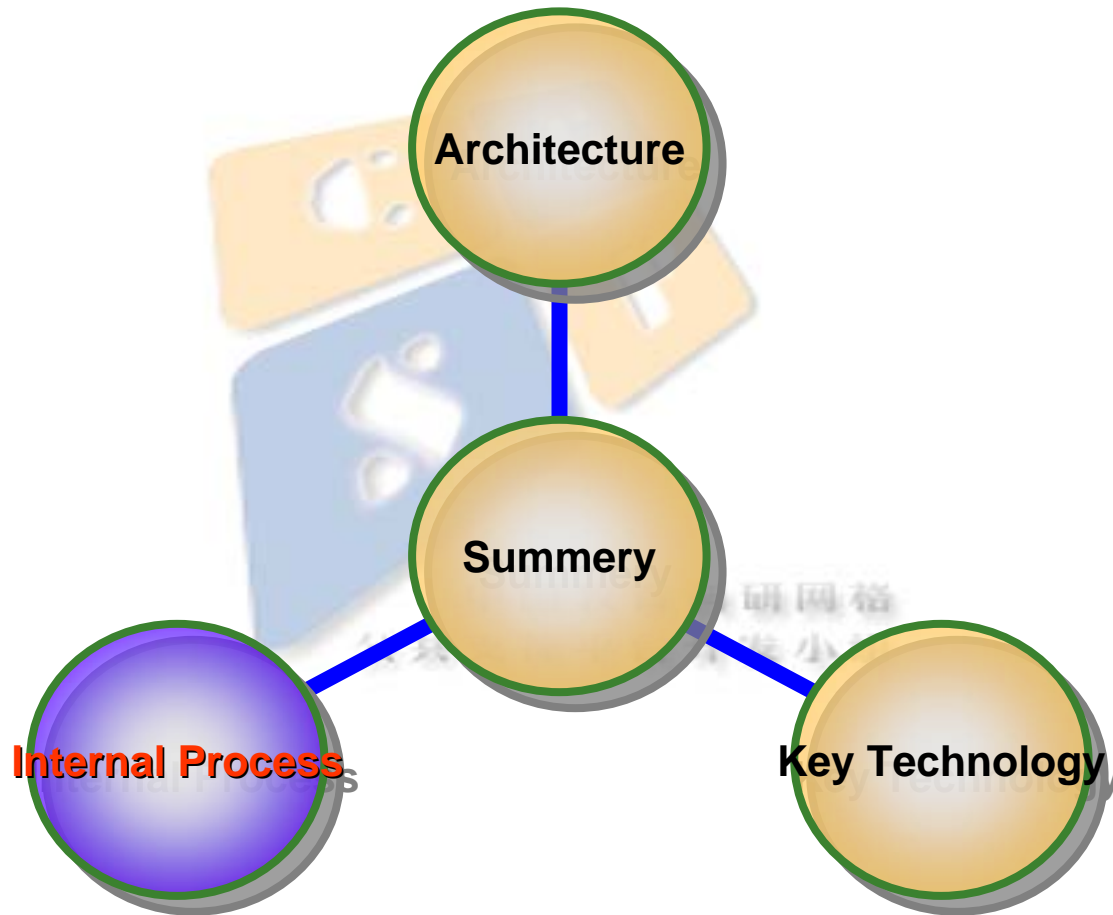


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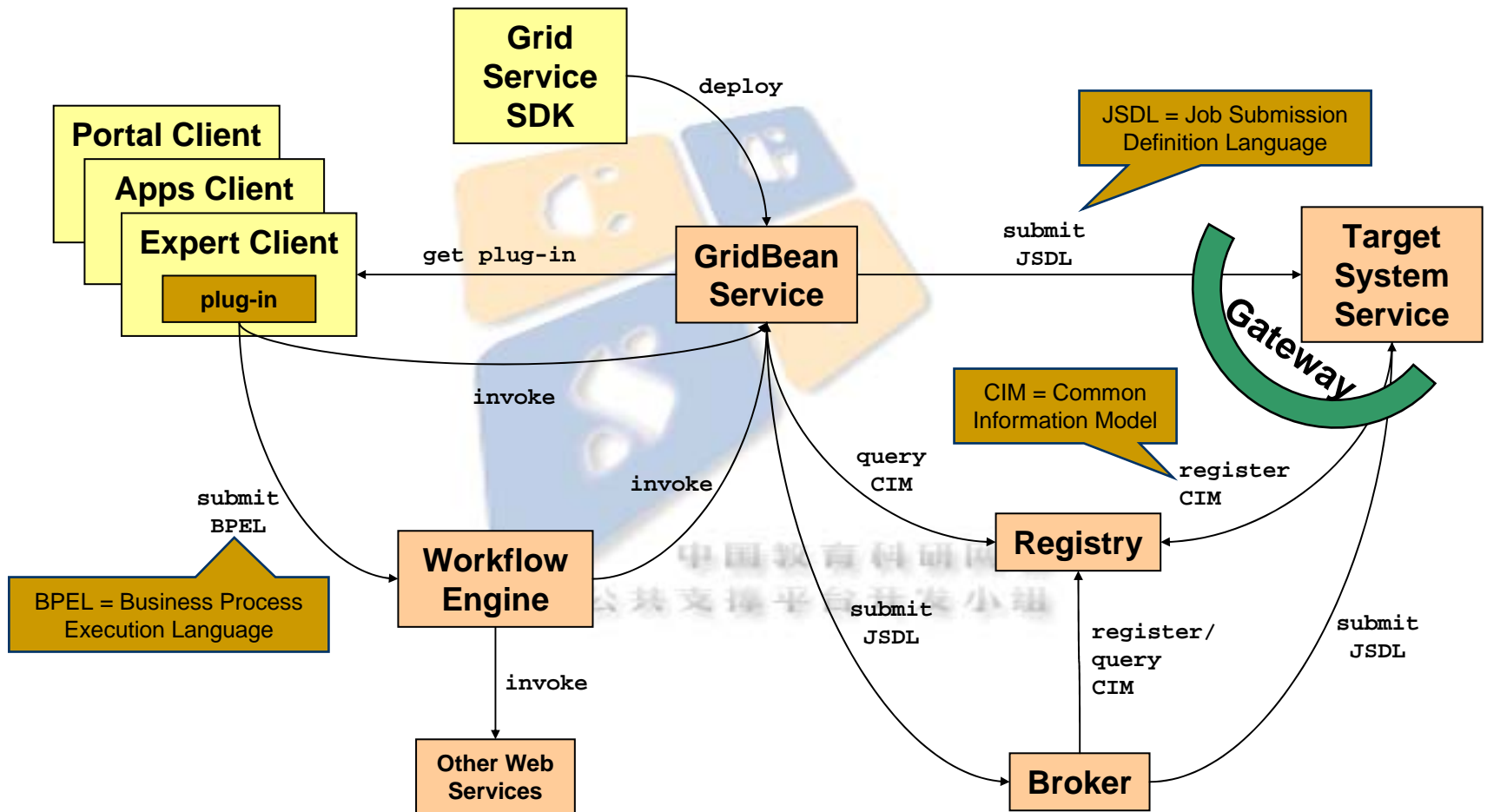


- **GPE is a TOOLKIT**
 - Front end of EACH GRID
 - Solve the problems in Application Layer
 - Focus on interactive-ability with User
- **CGSP is a SYSTEME**
 - Solve the problems both in App. Layer and System Layer. (Transaction, Reliability etc.)
 - Focus on global mechanism

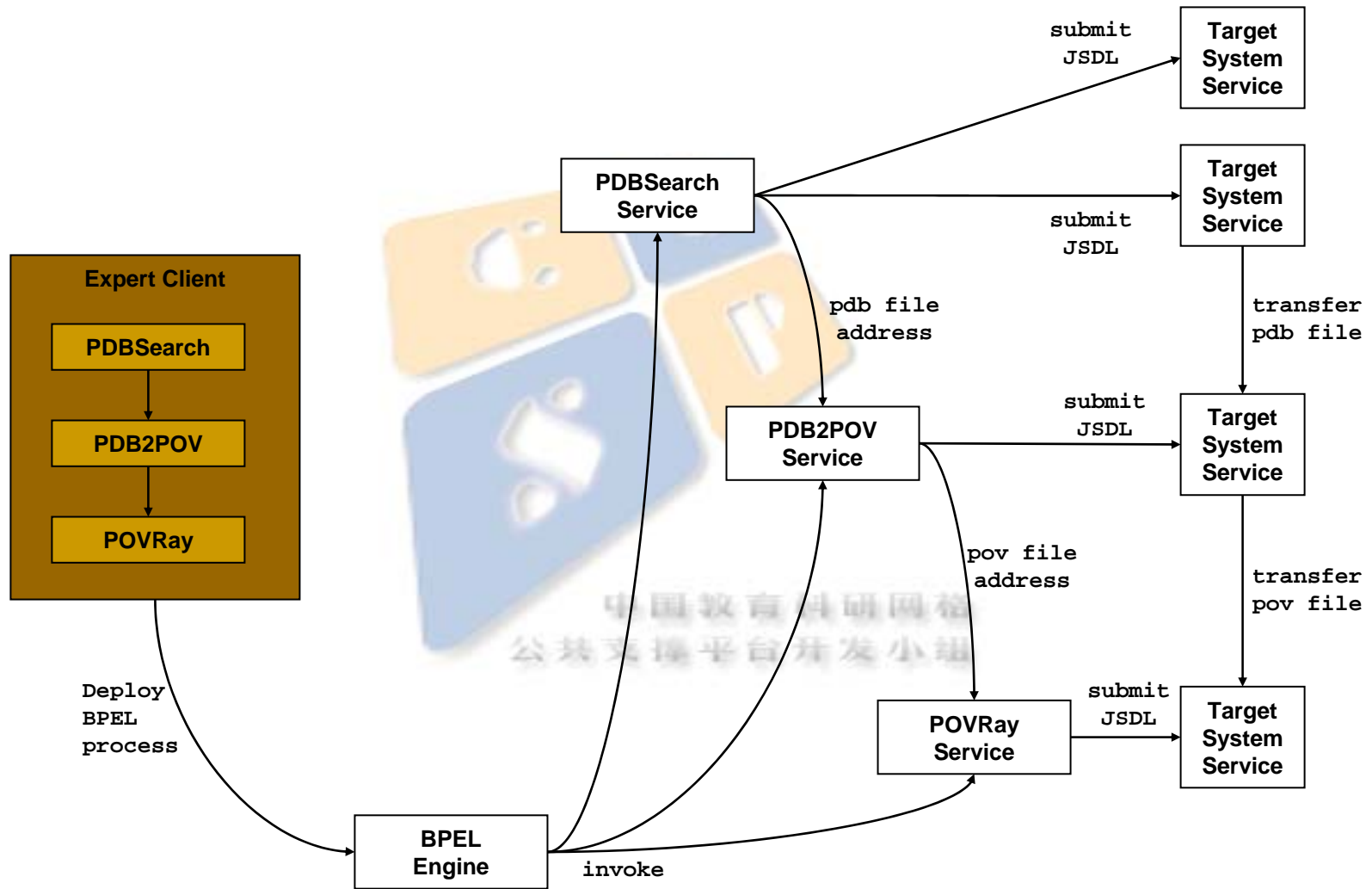
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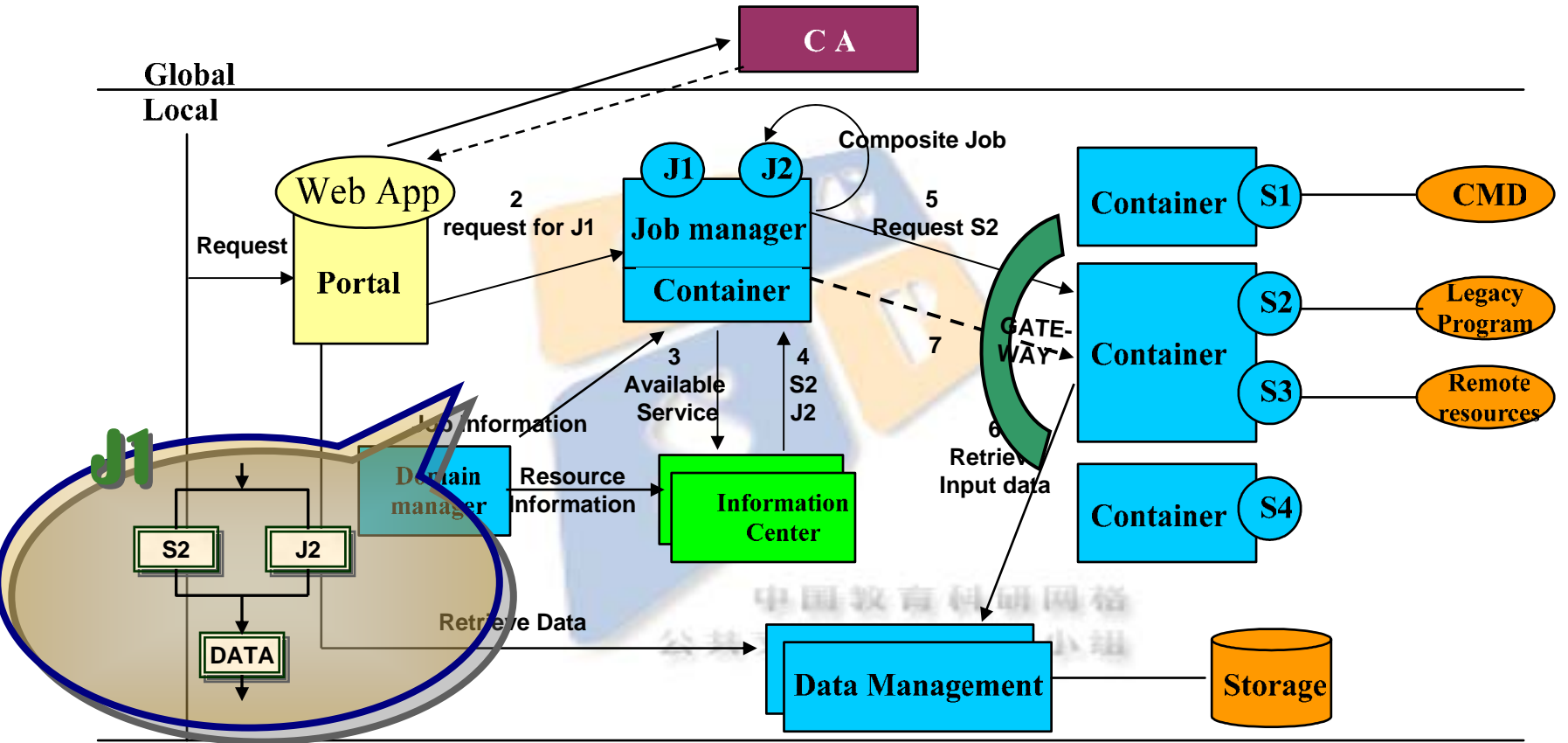
Process-GPE



Process-GPE preview



Process-CGSP



Tool set

Management GUI

Administrators

Resource wrapping tools

Resource providers

Job Definition tools

Developers and Grid Constructors

Portal tools

Programming models

programmers

Installation tools



GPE vs. CGSP



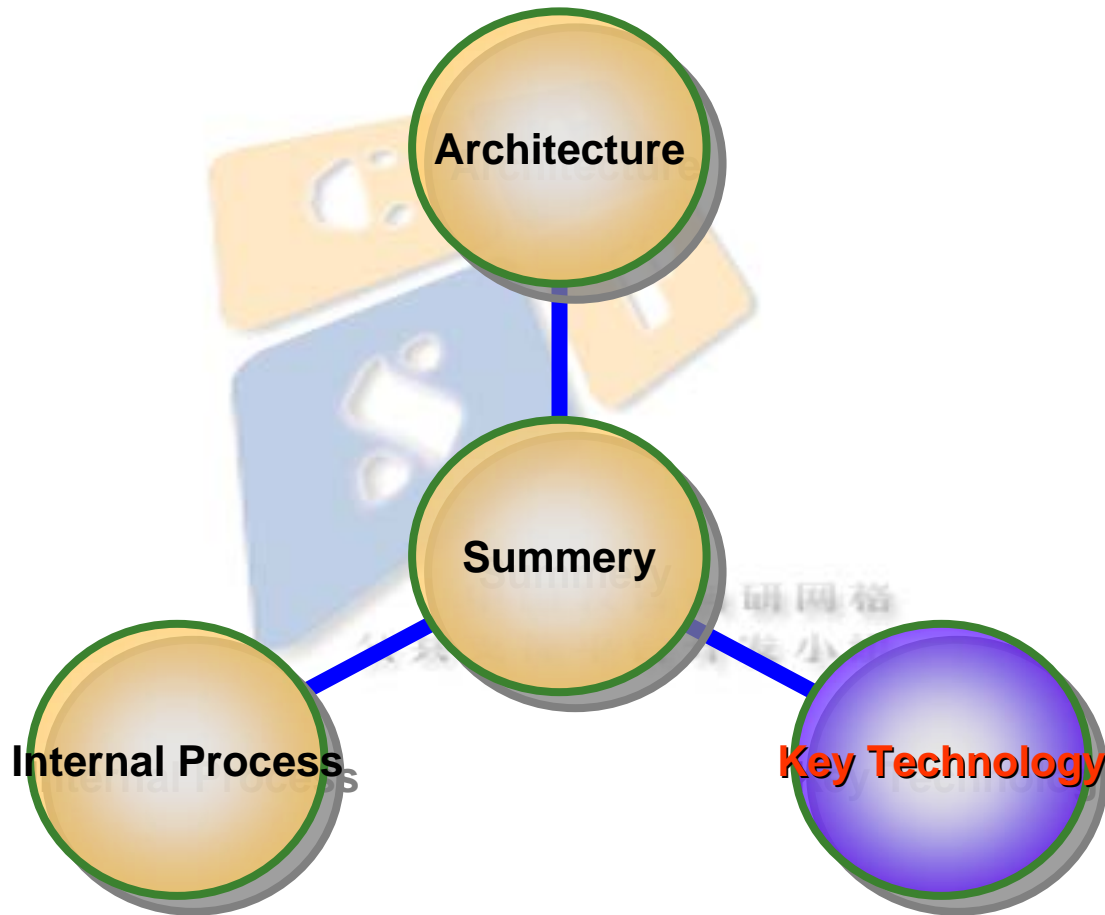
■ GPE

- ❑ Main process located in a local agent (Grid Bean Service)
- ❑ More flexibility less efficiency

■ CGSP

- ❑ Main process is focus on Grid System (Job Manager + GRS)
- ❑ More global cost less development cost

GPE vs. CGSP

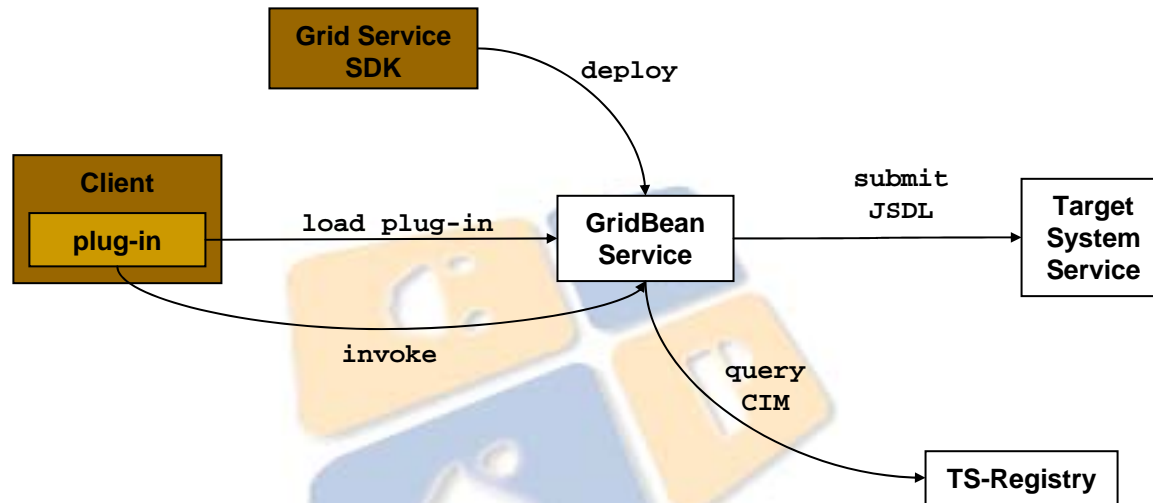


GPE vs. CGSP



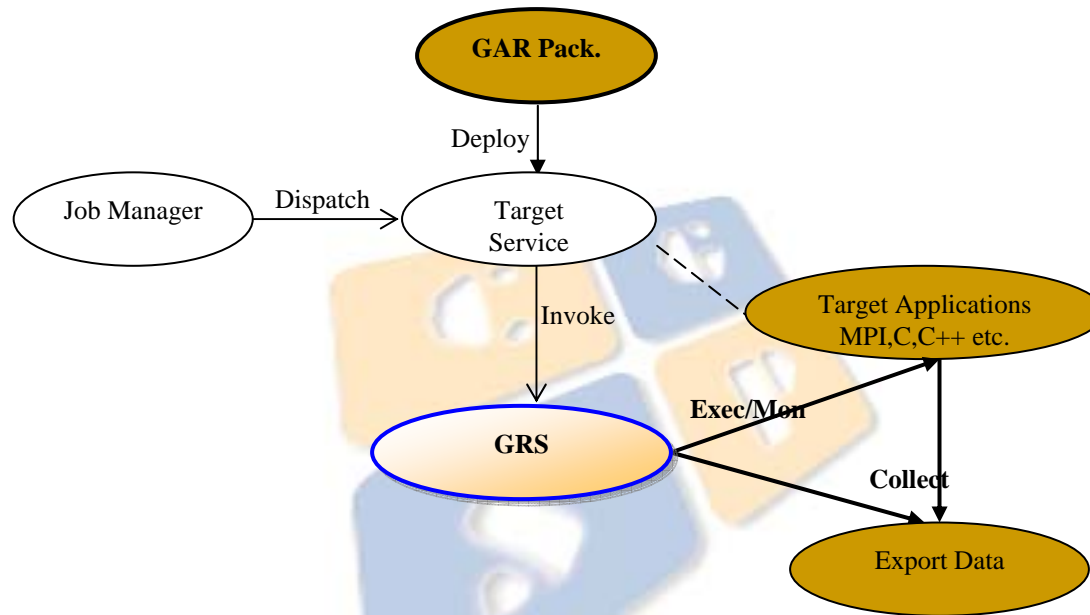
- Grid Bean Service vs. General Running Service
- CIM vs. Information Center + Data Center
- Grid Programming Lib vs. Grid PPI
- BPEL Engine + Broker vs. Job Manager
- Open Standards vs. Specific Standards
 - GPE: BPEL4WS, CIM, JSDL
 - CGSP: BPEL4GS, RM (CGSP), GJDL (CGSP)
- Desktop Application Based vs. WEB Based
- Plug-in vs. Encapsulation

GPE: Grid Bean Service



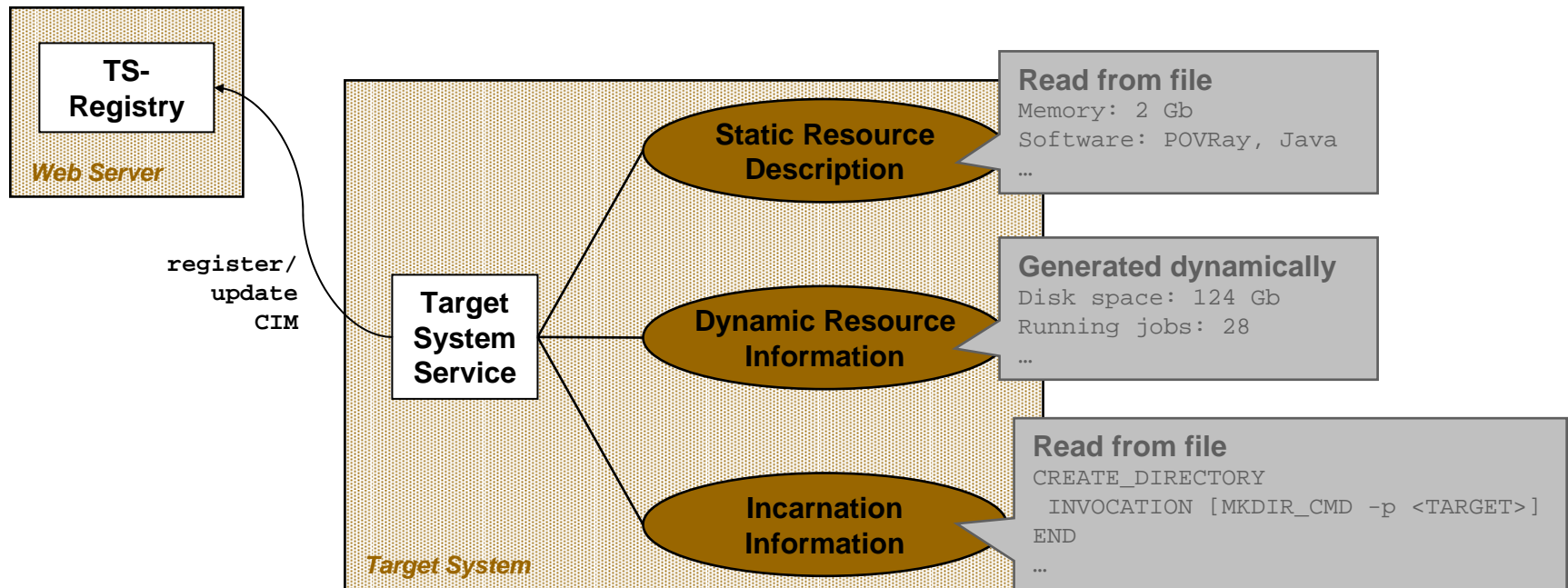
- GridBeans services are web services that
 - Offer simple application-specific interfaces to generic target system services
 - Provide a client-side plug-in for the different GPE Clients
- Developers will use a Grid SDK to develop, deploy and manage GridBean services
- Clients will **dynamically** load plug-ins from the GridBean Service

CGSP: General Running Service



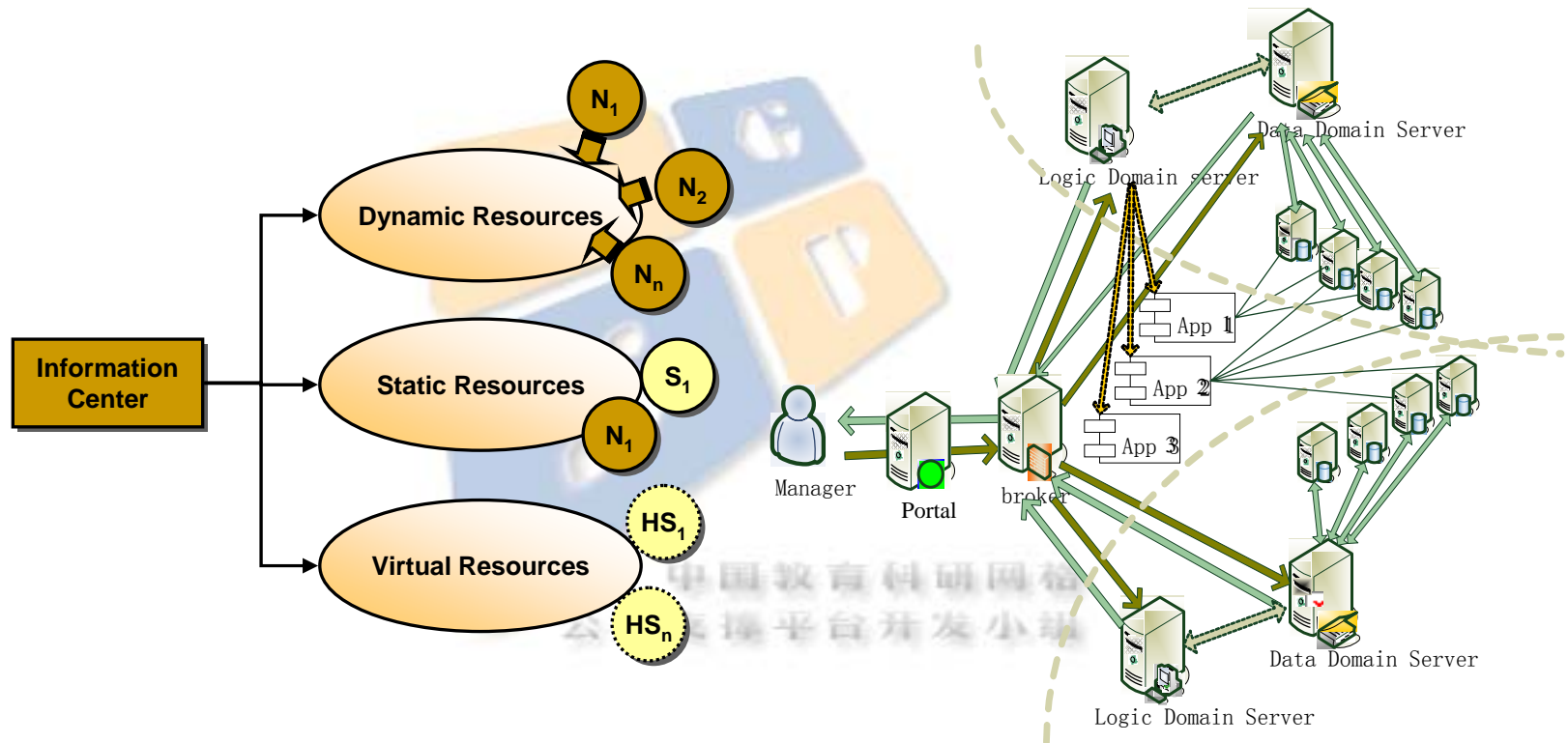
- GRS is deployed on Target System Container
 - Collaboration with Job Manager and Data Center.
 - Compatible with MPICH, C, C++ and other obj. codes.
 - Monitor the state and control each target service
- GRS is also a kind of atomic schedulable unit
- GRS is registered to Info Center
 - User Can Updated from any where.
 - Invoke it like a normal web service

GPE: Common Information Model



- Dynamic information about current state of target systems kept in one (or more) centralized registries
 - No need to query every TSS
- All three resource types could be read from a CIM management interface

CGSP: IC & DC



•Why split ?

•Data Grid is broadly used in many domains.

•In dependable File System Structure improve the efficiency.

Workflow

■ GPE

- Standalone BPEL Engine
 - lower reusability and lower sharing ability
 - lower load on Grid Control System

■ CGSP

- BPEL Engine embedded Job Manager
 - Recursive invoke : JOB = Web service
 - Higher reusability
 - Higher flexibility
 - Hyper Services , Schedule Algorithms and extendibility

Plug-in & Encapsulation

■ GPE Grid Bean Plug-in

- Easily download
- Easily development for end user
 - But who develop the plug-in ?

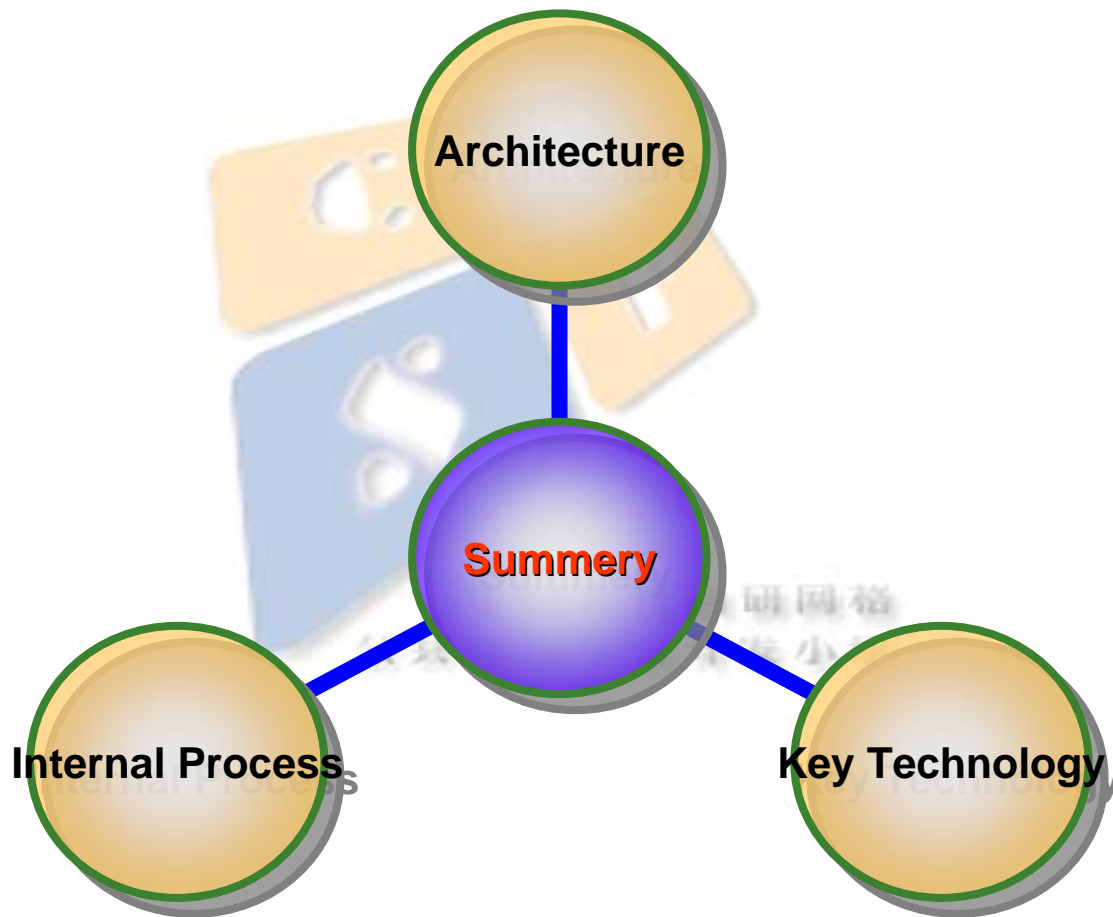
■ CGSP Encapsulations

- Easily upgrade from legacy application
- Easily use for end user
 - Only use the workflow and basic service
- Easily use for domain expert
 - Only define the workflow and wrap the traditional obj. codes without re-writing and learning Java & Web Service.

Security

- UNICORE: Permanent user certificates
 - Globus: Proxy certificates
 - UNICORE/GS: Explicit trust delegation
 - GPE: Kerberos for Grid services adoption?
 - Virtual Organization services?
 - CGSP: Proxy certificates
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GPE vs. CGSP



Over View - GPE

- GPE is based on Standards
 - JSDL, CIM, BPEL, WSRF, OGSA
- GPE architecture is flexible, service-based and extendable
- GPE tech preview release will be given to partners and customers mid of 2005
- Challenge: Following standards does not guarantee interoperability
 - Agree on common interfaces

Over View - CGSP

- CGSP based on Application and Service in ChinaGrid project
 - Some own standards for efficiency
 - Open interfaces for cooperation with other Grid platform
 - Widely supporting for
 - Workflow
 - Recursive Job
 - Virtual Services & Virtual Organizations
 - CGSP v1.0 will release this month(Dec, 2004)
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Cooperation Region

- GPE's strong GUI interface + CGSP's efficient Architecture and resource background
 - Flexible Grid Bean Service can broadly used in CGSP
 - Share the respective advantages in Broker, Security and Information modules
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Thanks!

Q&A

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