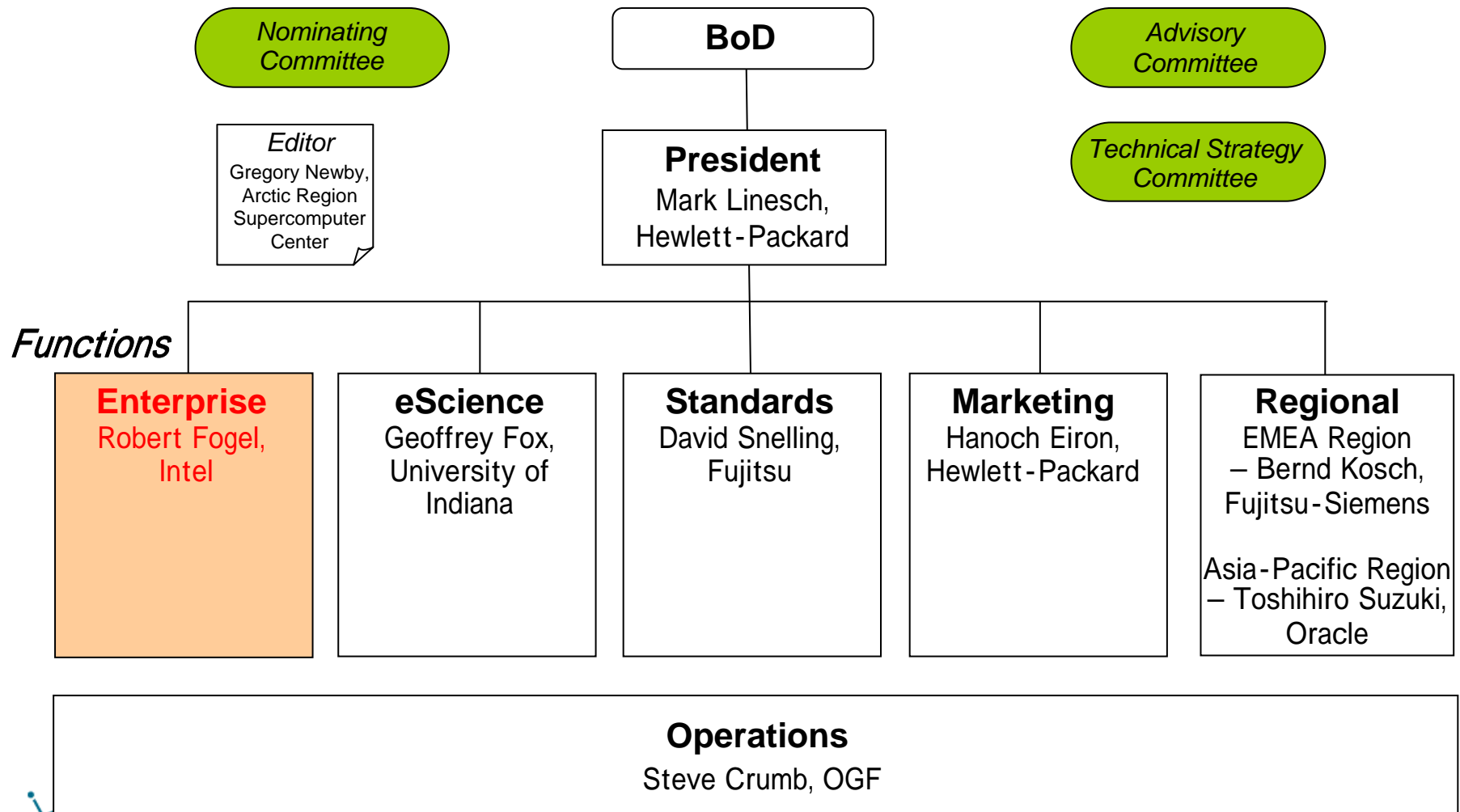

GGF18 コミュニティ動向

- OGFにおけるEnterprise 関連の状況 -

OGF Organization



Enterprise Functions

Functions
- Areas
-- Groups

1 Area : Industry Applications

2 Groups :

▶ Enterprise Grids Requirements RG (egr-rg)

▶ Telecomm Community Group (telco-cg)

グループとは独立に、
Functions レベルで企画・実施

Community Activities

▶ Semiconductor/ EDA Grid Requirements

▶ Pharmaceutical Grid Requirements

▶ Enterprise & Standards Summit

報告者: 武本充治 (NTT)

グループ	Telco-CG
目的	Group Discussion
状況	Telecom企業に共通の情報を共有するグループであり、現在、特にドキュメントを作成する活動は行っていないようである。
進捗	特に無し ・ETSI (European Telecommunications Standards Institute) におけるGrid活動の報告。 ・ITU-TにおけるGridとNGN (next generation network) に関するWorkshop(10月開催)の宣伝。
今後	今後も情報共有の場として持つようである。 ITU-TにおけるGrid/NGNのWorkshopを開催する
参加者数	約20名
所感	Telecom企業においては、Grid技術は、CPU資源などのリソース流通の他、ネットワーク要素の組み合わせ方法という両観点から議論すべきものであると思われるが、はっきりしない。また、Gridサービスとして考えた場合にも、Gridサービスを提供する立場、Gridを利用して社内システムを構築する立場の2つの立場があるが、これについてもはっきりとした議論はされていない。 しかし、Telecomが最も注目しているキーワードNGNについて、Workshopを10月に開催されるため、次回以降は何かアクションが見られるかもしれない。

報告者：伊藤 智(産総研)

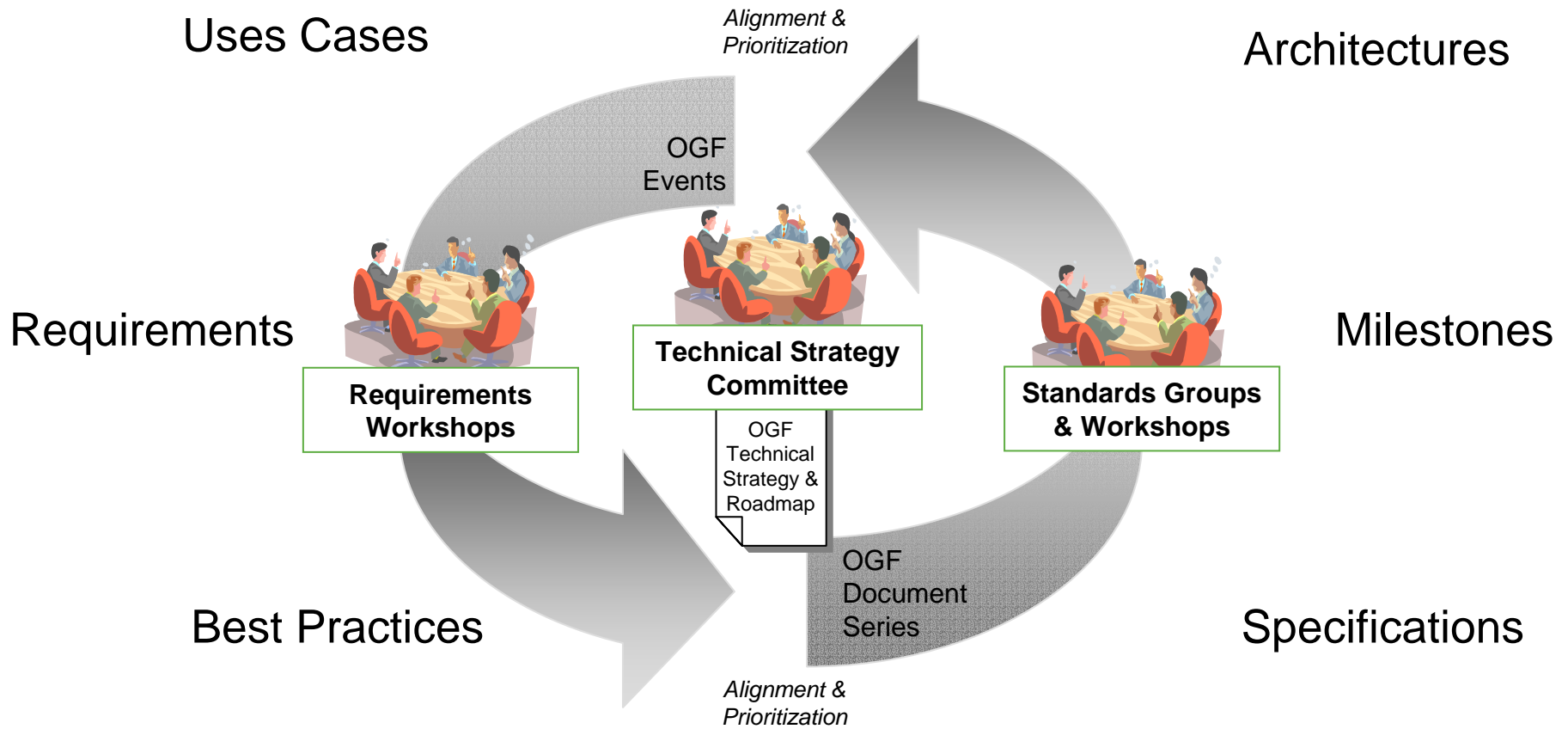
グループ	Enterprise & Standards Summit #1, 2
目的	エンタープライズグリッドへの要求を分析し、それを標準化の活動へつなげる
状況	二回のセッションとして実施。#1は、エンタープライズ系のアクティビティを集め、それぞれからエンタープライズグリッドへの要求を話してもらう。#2では、集めた要件の分析・分類、および今後の進め方を議論した。
進捗	<p>#1で発表された活動は以下のとおり。</p> <ul style="list-style-type: none"> ・旧EGA Enterprise Grid Requirements WG ・Boeing の事例 ・Community track (Pharmaceutical Grid Requirements と Semiconductor/EDA Grid Requirements) ・OGF のグループの活動として (Storage Networking -CG と Enterprise Grid Requirement -RG) <p>#2での議論</p> <p>1コマ目に出されたエンタープライズグリッドへの要求は32項目に整理されたが、「ジョブ投入」といった具体的な要求から、agile, adaptable といった非常に抽象的な要求までまちまちで、これらをどう扱うかが議論になった。既存グループに伝えたり専用のグループを新設したりするほか、エンタープライズのグループを新設してベストプラクティスを文書にまとめたりロードマップに反映する必要もあるという意見も出された。</p>
今後	テレコンと wiki によってサーベイを対話的に行ない、次回の OGFに向けてエンタープライズの視点にもとづいて優先度の高いアイテムを分類する
参加者数	#1, 2とも6 - 70名程度
所感	<ul style="list-style-type: none"> •具体的な標準化の項目に落ちるまでのところで、どれだけのボランティアが参加してもらえるかが、この活動がうまくいくポイントのように思える。 •WG/RGという枠組みでの活動ではないように思えたが、どのように進めるのか？

OGF Technical Strategy/Stakeholder Alignment Process



Open forum for grid innovation and outreach

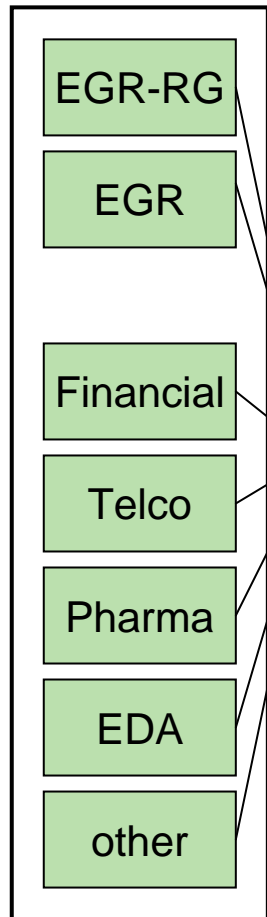
Open standards for grid software interoperability



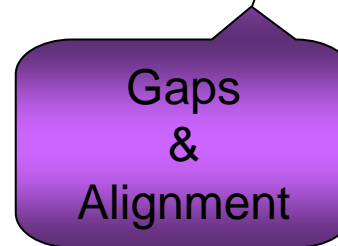
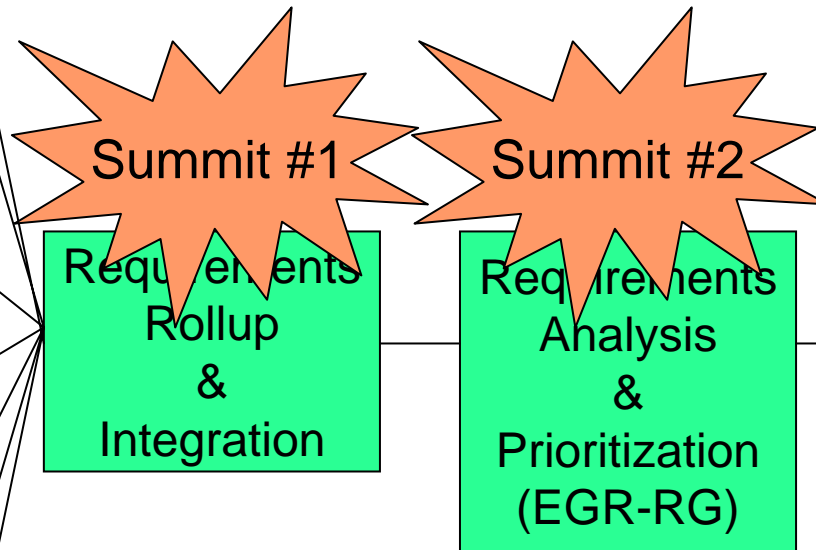
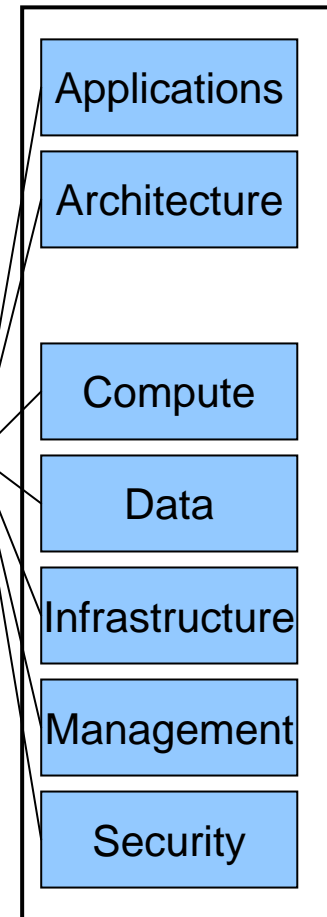
Requirements/Standards Context Diagram



Requirements Solicitation



Standards Groups



NOMCOM 2007から

Nomination deadline Sunday, November 19th, 2006

🌐 Open Positions

▶ Standards:

- 🌐 - Vice President Standards (1)
- 🌐 - Area Director Architecture (1)
- 🌐 - Area Director Infrastructure (1)

Area, Group の拡大を図っている

▶ Enterprise:

- 🌐 - Area Director End User Requirements (1)
- 🌐 - Area Director Vendor Adoption (1)
- 🌐 - Area Director End User Adoption (2)
- 🌐 - Area Director Best practices (2)

▶ Marketing:

- 🌐 - Area Director At Large (3)

▶ Operations:

- 🌐 - Area Director Membership (1)

報告者: 伊藤 智 (産総研)

グループ	EGR-RG (Enterprise Grid Requirement RG) #1, #2
目的	Enterprise グリッドに対してキーとなる技術要件と共通的アプローチを見出すこと。
状況	ベンダーとユーザとの間のギャップを解析するため、テンプレートを作成し、ユースケースを収集している。ベンダーやユーザからユースケース(ケーススタディ)を集めるワークショップ形式の議論を開催した。企業、および学術系から合わせて4件の発表が行われた。
進捗	これまでの活動の紹介と、ワークショップ形式によりHP、Platform Computing、Southeastern Universities Research Association、Fraunhofer Institut fuer Techno- und Wirtschaftsmathematik: ITWMの四件の発表があった。今後の進め方の議論を行った。
今後	次のOGFでも今回のワークショップ形式の発表を行う。 これまでのユースケースおよび発表のケースに対して、パターン指向分析を行っていく。パターンを分割(ユーザアクセス、ワークフロー環境、プラットフォーム可視化など)して、要素化してはどうかという議論があった。
参加者数	# 1 # 2とも30名程度
所感	ワークショップスタイルの議論では、非常に興味深い要件が出されたとし、活発な意見も出た。しかし、いざ、分析やドキュメント化となると、あまり積極的に参加してもらえていないのが、このグループの問題

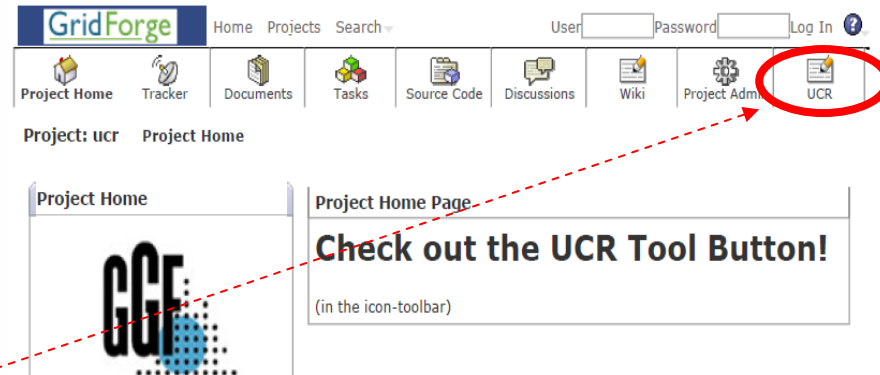
Introduction of EGR-RG



- <http://forge.gridforum.org/projects/egr-rg/>
- Group Email: egr-rg@ogf.org
- Enterprise Grids Requirements RG (EGR-RG)
- Group Purpose The purpose of this group is to identify key technical requirements and common approaches to enterprise grid computing.
- Group Abstract The purpose of this research group is to identify key technical requirements, scenarios and common approaches to enterprise grid computing. The work of this research group should include both an examination of technical requirements and an exploration of common use cases for enterprise (on-demand, utility, automated, etc.) grid systems.
The technical scope of this RG includes,
Promoting technologies that
 - provide services which dynamically meet the requirements of applications and the priorities of the business.
 - drive efficient utilization of IT resources namely (optimal resource allocation, dynamic resource allocation)
 - deliver automation/reduce system management.
 - The Grid technologies to be addressed apply to all resources required for computation, which may be geographically local and/or distributed.

Soliciting Usecases

- Usecases as well as the Usecase Template can be found in the OGF's Usecase Repository (UCR for short) Thanks to Andre Merzky
- How to get there.
 - Choose URL <http://forge.ggf.org/sf/projects/ucr>
 - And Click on the UCR button
 - Go to the bottom of the shown page
 - No. 29. is the EGR-RG Usecase Template.
 - No. 26 is the OGSA Use Case Collection
 - Nos 27, 28, 30 are the collected Usecases so so far (All from Business Grid Computing Project)



<http://forge.ggf.org/sf/projects/ucr>

26	OGSA Use Case Collection	uc	Architecture	OGSA-WG	OGSA
27	Disaster Recovery System	uc	Industry Applications	EGR-RG	Disaster Recovery, Business Grid Middleware
28	Multiple In-house System	uc	Industry Applications	EGR-RG	Data Center, Server Consolidation, Total Cost of Ownership (TCO), Business Grid Middleware, In-house System
29	Enterprise Grid Requirements – Research Group Use Case	tpl	Industry Applications	EGR-RG	Enterprise Grid Requirements Usecase Scenario
30	Wide Area Load Balancing System	uc	Industry Applications	EGR-RG	Data Centers' Cooperation, Globally Distributed Application System

EGR-RG Usecase Template



- 1 Use Case Title
 - **1.1 Author**
 - **1.2 Abstract/Summary**
 - Provide a brief description of the use case. Address the salient aspects of the use case
 - **1.3 Keywords**
 - List the keywords for this use case so that they may be used in a search
 - **1.4 Category**
 - Define taxonomy to categorize this use case
 - Scope: Business process, tool, domain application, infrastructure
 - Organization Type: Company, university, national lab,
 - Deployment type: Intra-organization, Extra organization, Inter-Organization, Internet
 - Production status: Experimental, Production
 - Existing implementation: Implementation available, expected implementation

- **1.5 Perspective**
 - Describe the perspective brought to the use case
 - **1.5.1 Individual**

IT person, IT manager, End user, Developer, Architect, Researcher
(new grid technologies)

**(How about)Infrastructure Manager and Application Manager ?
(TN)**
 - **1.5.2 Organization**

Adopter, Seller (software, hardware), Solution provider, Consulting,
Research and/or Development
 - **1.5.3 Industry vertical or segment**

Specify the type of market or focus. Some examples can be
pharmaceutical, financial, CAD, gaming, home entertainment,
content distribution, etc. Try to use recognized terms for the
segment that this use case applies to.
 - **1.5.4 Application Type**

CAD, risk analytics, etc.

- **1.5.5 Expectations**

This is an explicit statement on the tone of the use case. The use case will be written with the expectation in mind but this section explicitly states the expectations.

- » Expectation of new usage, i.e. this is what I will be able to do that am not feasibly able to do today
- » Change in usage from current usage to different/new usage, i.e. this is how I do it today and this this how I expect to do it differently/better.
- » The use case is a pattern that applies in many scenarios and has many aspects that need to be standardized.
- » If the expectation can be quantitized it would be very helpful.

- **1.6 Motivations & Goals**

- **1.6.1 Problems**

Discuss what the known problems with the particular use case are. This will lead to discussion where Grid is expected to help. Examples of problems could be: Cost, significant manual overhead, there are no acceptable solutions, impedes time to market etc.

- **1.6.2 Benefits or Value**

Explain the possible or available benefits of the use case. For example will this reduce the TCO in the datacenter, increase user productivity, improve compliance to legal obligations, decrease the turnaround time etc.

- **1.7 Scenarios**

Organize the use case into scenarios. Each scenario should clearly identify the

Actors

All resources and resource types that come into play. Are resource distributed (global vs local), dedicated vs shared, real vs virtual etc

- » Discuss the resources and their types (if your definition of resources is broad then specify that). Mention/describe the resources used. Highlight the primary resources (e.g. data and network in a data oriented use case)

Capabilities and services

Interactions

Flow of control (if any)

Pre-requisites

Infrastructure assumptions

Non functional aspects: security considerations, performance expectation, scalability required

Effect gained by the scenario: if the user was able to provide some type of comparison between the before and after situation, that would be particularly helpful. Examples in the order of depth of analysis might be:

- **1.8 Standards**
 - Explain how standards can help. What are the specific areas where standardization will be useful? Are there any known standards that are available or in development that can apply in specific scenarios? Have any of the current standards been applied? Where did they help and where were they lacking?
- **1.9 Miscellaneous**
 - Any additional comments or information that is not captured in the other sections.
- **1.10 Reference**
 - Provide Web links or bibliographic references for more information on the use case or aspects of the use case.

Examples of Use Cases



- GGF14
 - GridASP
 - Multiple In-house System
 - Wide Area Load Balancing System
 - Disaster Recovery System
 - NextGrid
- GGF17
 - Ubiquitous SOA

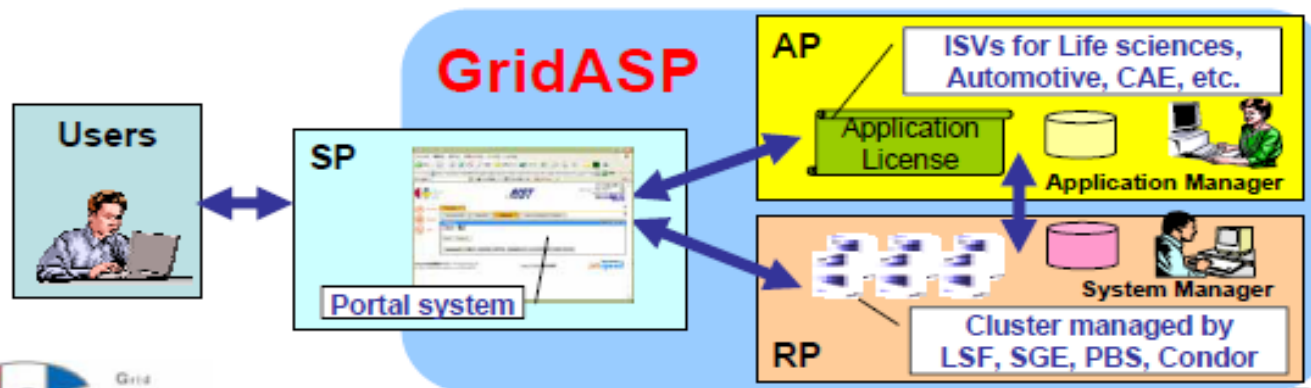
GridASP Satoshi Itoh AIST



1.2 Abstract/Summary



- The GridASP is a utility computing framework for technical computing in the enterprise.
- The concept of the GridASP is to separate the function of ASP (Application Service Provider) into three independent providers.
 - ▶ resource provider (RP)
 - ▶ The Application provider (AP)
 - ▶ The service provider (SP)



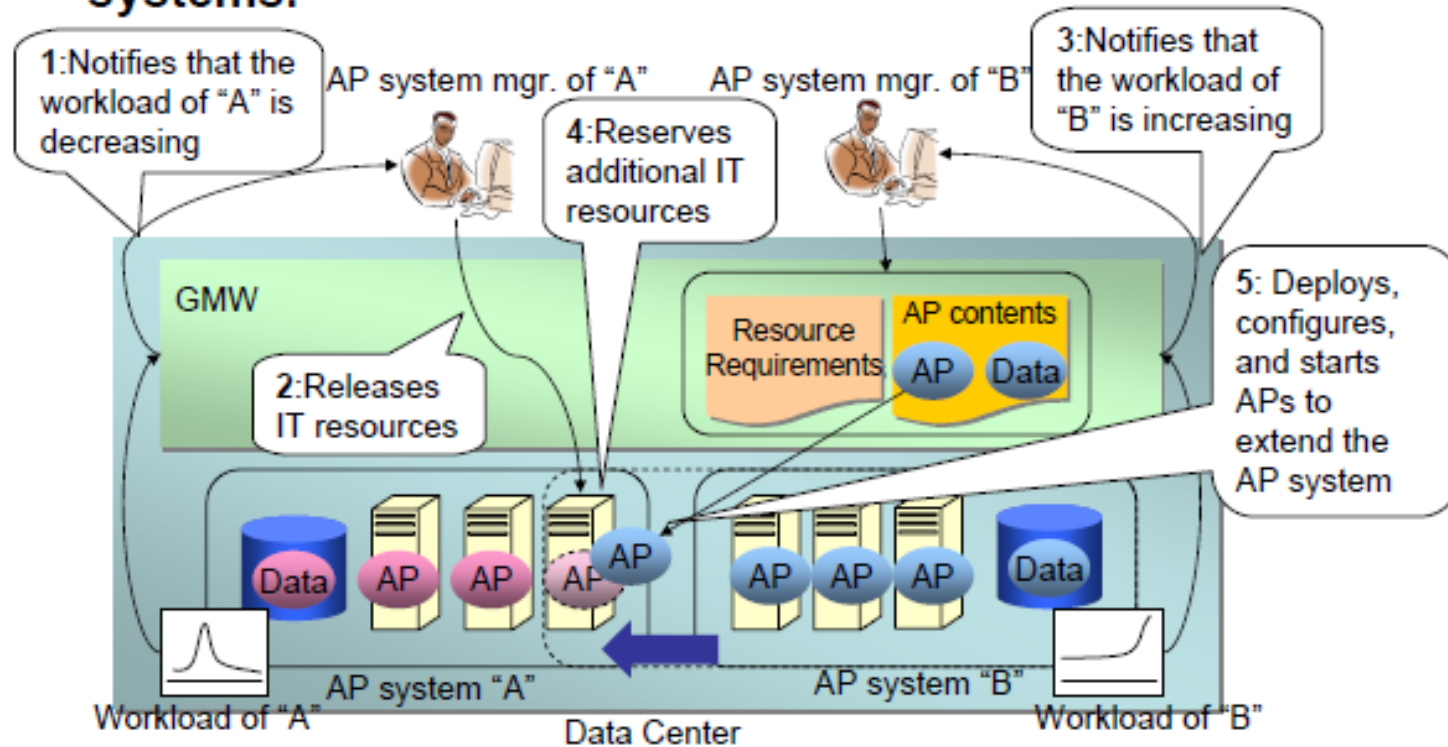
©Grid Technology Research Center, 2005



Multiple In-house System (Miyakawa et. Al)

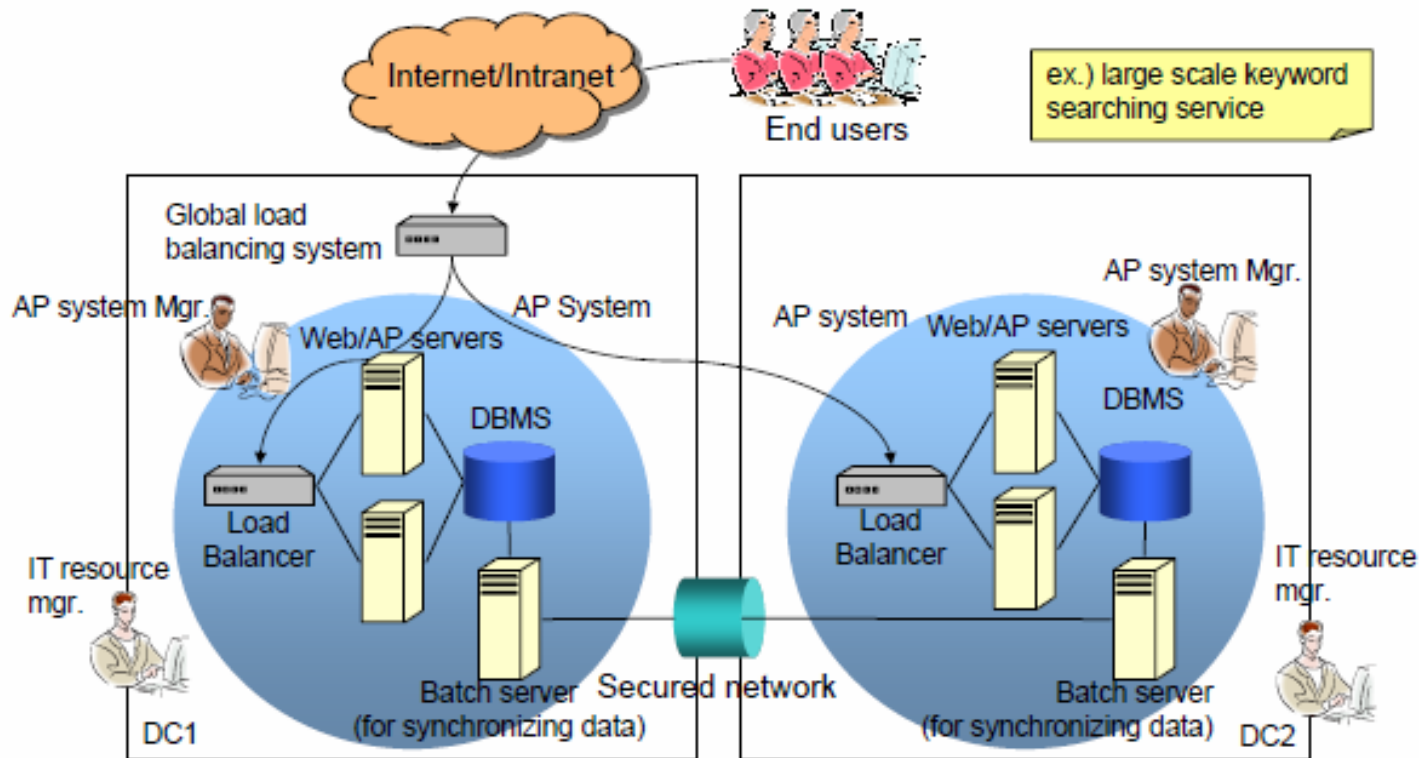
Scenario 1-2: Sharing IT resources

Allocating IT resources reduced from other application systems.



Wide Area Load Balancing System (Miyakawa et al)

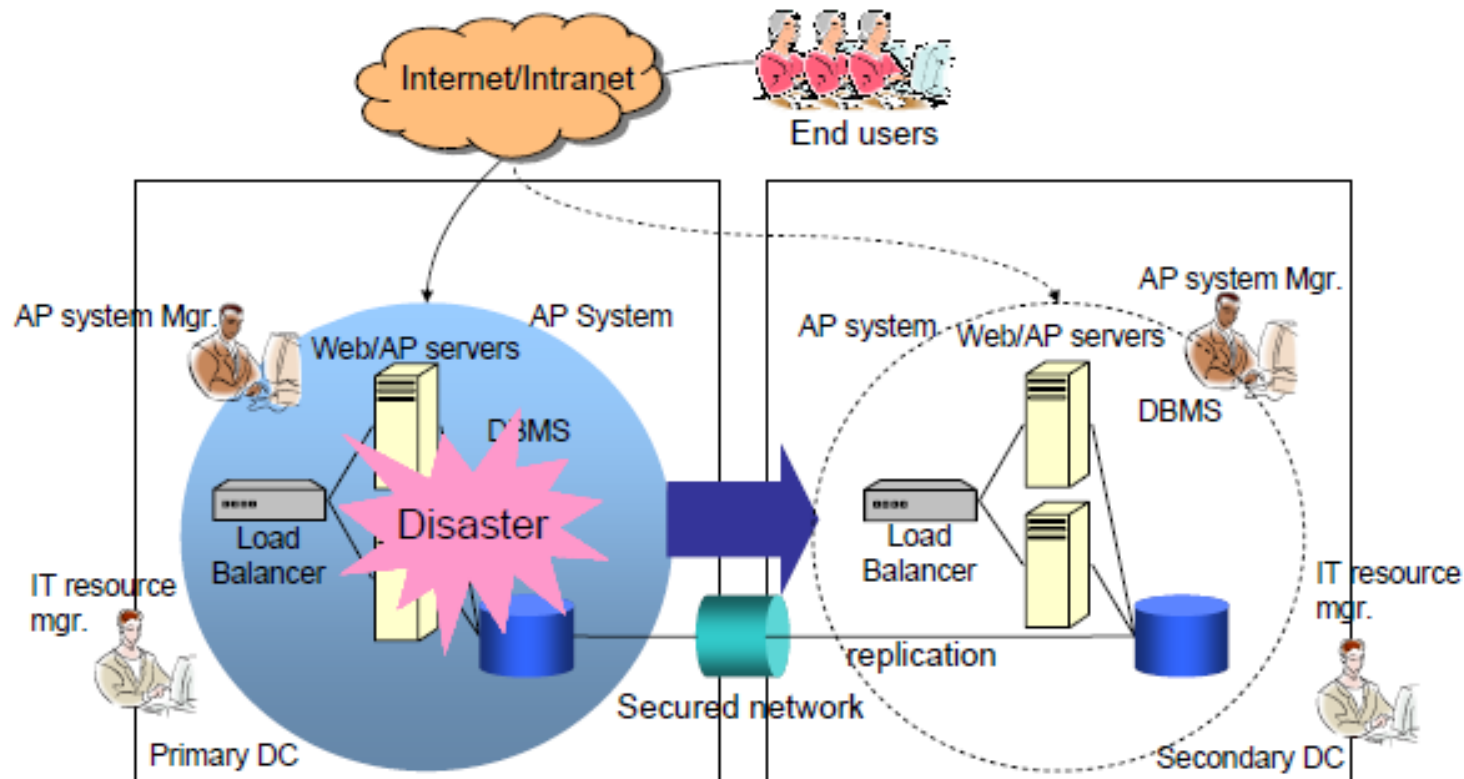
What is a wide area load balancing system? A large scale web site service among several DCs



Disaster Recovery System (Miyakawa-et al)

Disaster Recovery System

Web three-tier applications are recovered in another DC.

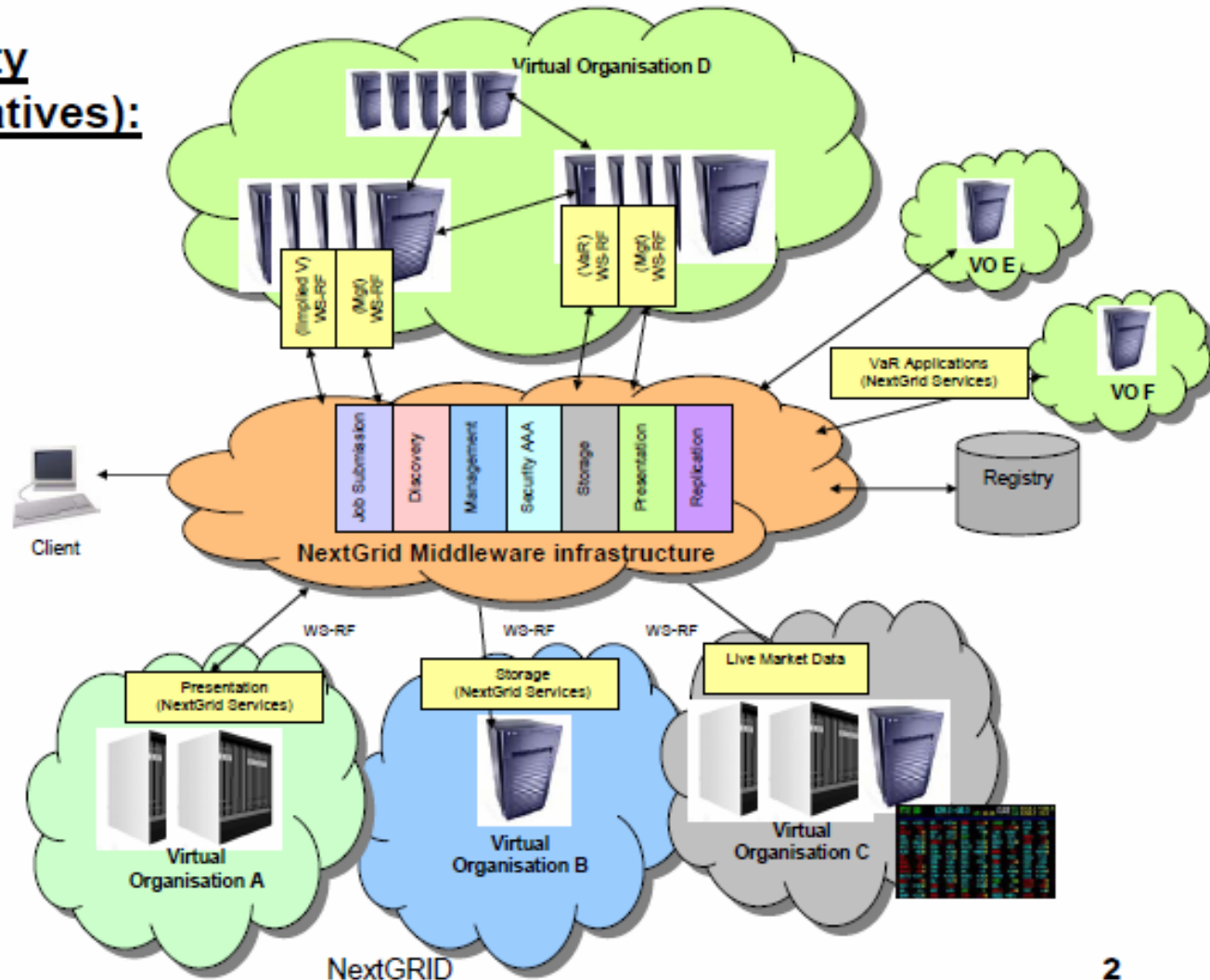


NextGrid (G. Lonsdale)(PPT only)

Financial Applications

a) Implied Volatility (QUB, First Derivatives):

Implementation uses the data base language kdb+ and the OpenRiskGrid environment based on the Globus Toolkit (version 3)

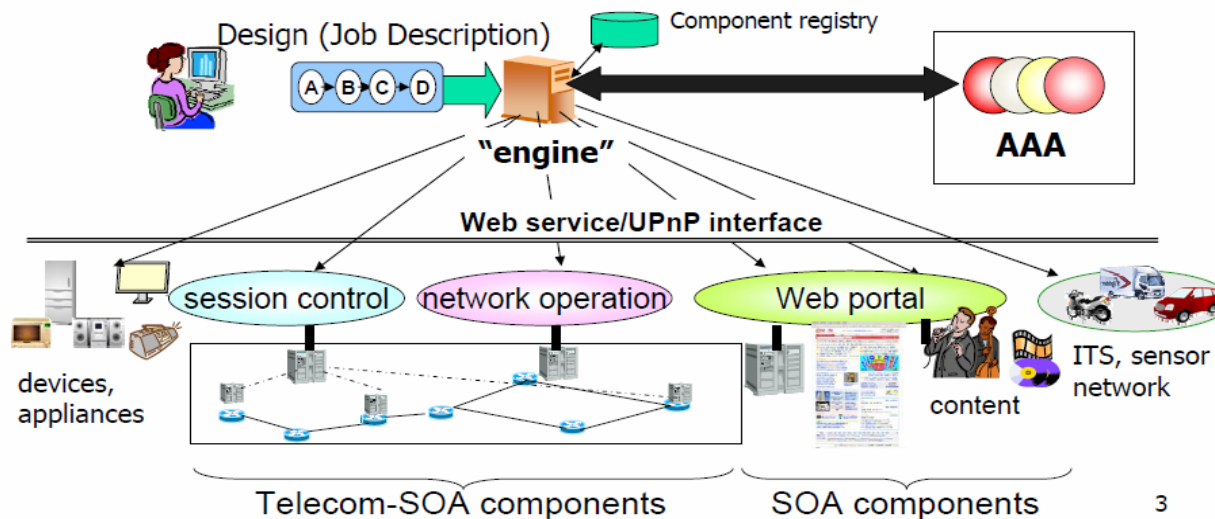


Ubiquitous SOA

- We had people from Takemoto-san (NTT) describing their Ubiquitous SOA (They are now creating a Usecase based on the Template)

Overview of Ubiquitous SOA

- Our ubiquitous service integration platform provides composition capabilities using appliances, sensors, telecom-SOA components as well as ordinary SOA components.
- Network operation functions, session control functions, and ordinary Web page functions are provided directly or through Web-service conversion wrappers.
- Application service providers, and even ordinary people, can provide application services by integrating components in the network.



http://forge.gridforum.org/sf/docman/do/downloadDocument/projects.egr-rg/docman.root.meeting_materials.meeting_materials_ggf17/doc13655

Decided to find out on the Web.



- Whose home page to look for?
 - Enterprises in the following. Due to time constraints, only Platinum and Gold Organization Members

Platinum Organization Members

- National Institute of Advanced Industrial Science and Technology, Japan (AIST)
- Hewlett-Packard
- IBM
- Intel
- Microsoft Research
- Silicon Graphics, Inc.
- Sun Microsystems

http://www.gridforum.org/Members/ggf_members_members.php

Gold Organization Members

- Computer Associates
- DataSynapse
- EMC
- Fujitsu
- Grid Consortium Japan
- Hitachi Data Systems
- KISTI
- US National Archives and Records Administration (NARA)
- National Computational Science Alliance (NCSA)
- Nortel Networks
- Oracle
- Platform Computing
- Shell Exploration
- Sybase

Problems.

- Copyrights: How can one make a summary without fringing on each company's copyright?
 - For the time being, just include the URL and let the people find out. Probably some more info. Eg. No. of pages can be added.. = > Get Permission
- Most of the papers are either introductory material, or just describe the results and not the technologies which created the results.

Abstract Candidates



- Source: [http:](http://)
- Date: March 200X
- Adopter: AAA Corporation (Healthcare)
- System: YY System, ZZZ servers
- Users: Employee
- Application: data analysis
- Benefit: drastically lowered the total cost of ownership and dramatically increased productivity
- *Model: eg HPC*
- *Updated information: (Name of the Contact Person)*
- *No. of Applications, No. of sites: Size of the Grid*
- *Webpod (Semantics?)*
- *Simple Questionnaire.*
- *What are the semantic annotations*

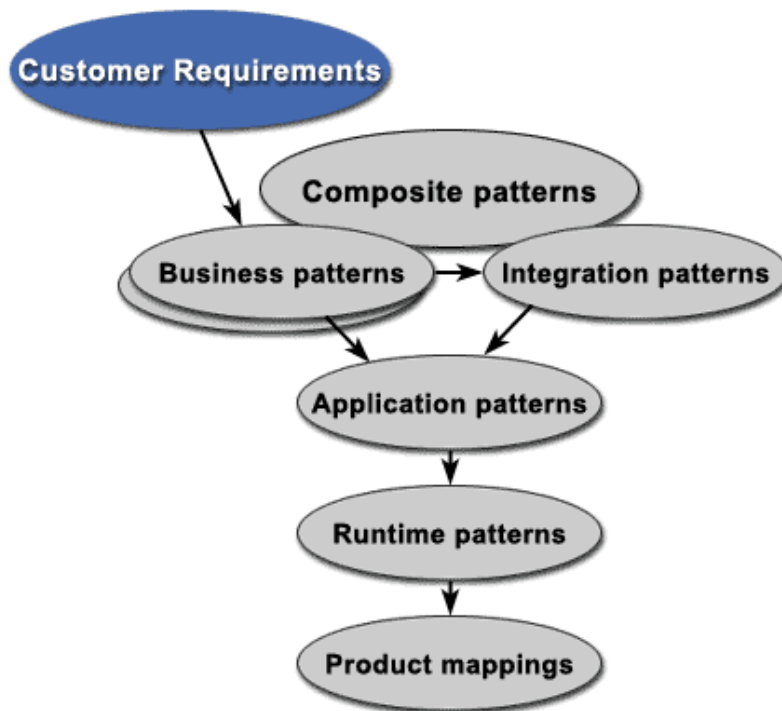
Workshop Style Discussion



- “US Navy's Fleet Numerical Meteorology and Oceanography Center”, Nick Werstiuk, (Platform Computing)
 - 数値気象予報、複数サイトのセンターのリソース約1000CPUをLSF Multi-cluster で統合
- “Building a Campus Grid: Concepts & Technologies”, Mary Fran Yafchak (SURA: Southeastern Universities Research Association)
 - 複数の大学で、リソースの共有、統一ID管理、CPU稼働率の向上を目指す。
 - Campus Gridだが、Enterpriseと同様の要件
- “Grid for Financial Services”, Larry Ryan, (Hewlett-Packard)
 - Hartford (保険会社) にFinancial services (トレーディングやリスク管理など) 向けシステムを構築。8000CPUを超え、25000CPUへの拡張を予想。特に管理が問題
- “Requirement Analysis of Grid Scenarios”, Mathias Dalheimer (Fraunhofer Institut fuer Techno- und Wirtschaftsmathematik: ITWM)
 - グリッド環境を提供するPHASTgridを開発 (user interface, grid server, job servers, compute nodes; Unicore front-end)。ビジネスセクタのアプリケーションにフォーカス。
 - Image processing, Life Science, Financial(trading), Robust engineering など

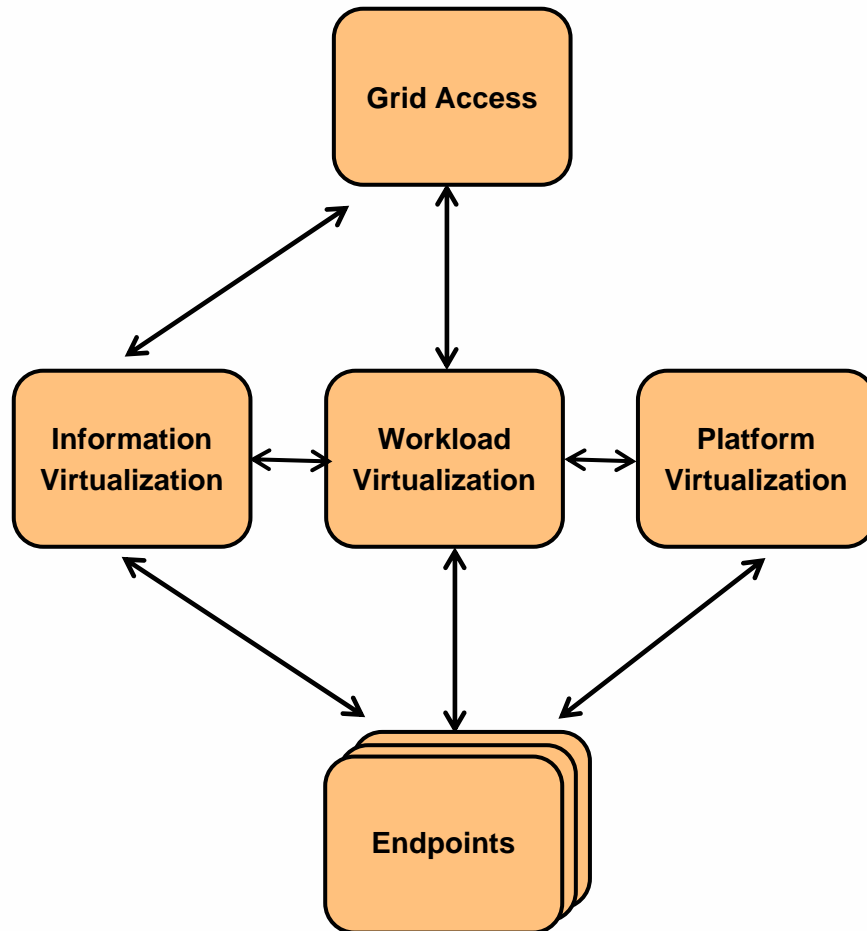
General Pattern Types

今後はパターン分析を進める



- Business patterns identify interaction between users, business, and data
- Integration patterns tie multiple business patterns together
- Composite patterns represent commonly occurring combinations of business and integration patterns
- Application patterns describe conceptually how application components and data within a business or integration pattern interact
- Runtime patterns define logical middleware supporting an application pattern

Composite Pattern



- Access patterns
 - Extended single sign-on
 - Directly integrated single channel
 - Store and retrieve
 - Replica location
- Workload virtualization patterns
 - Basic scheduler
 - Meta-scheduler
 - Peer-to-peer scheduler
- Platform virtualization patterns
 - Basic manage resources
 - Intelligent manage resources
 - Dynamic manage resources
- Information virtualization patterns
 - Local data access
 - Remote data access
 - Remote access to local data