

# フラグシップアーキテクチャOGSA™の最新状況

## OGSA-WGおよび関連するWGの状況

23 August, 2007  
グリッド協議会 第3回Grid Hotline  
OGSA-WG 共同議長 岸本光弘(富士通)

# アウトライン

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- Open Grid Services Architecture とは
- イベント(会議、電話会議)
- ドキュメント
- 優先作業項目
- 今後の予定
- お願い

# OGSAとは



- サービス指向のアーキテクチャ
- 交換可能な, コンポーネント指向アーキテクチャ
  - コンポーネントは交換・組み合わせ可能
- 分散環境における, メタOS機能を定義
- Webサービスが規定する各種技術・仕様を利用

# SOAとWeb Servicesの利点

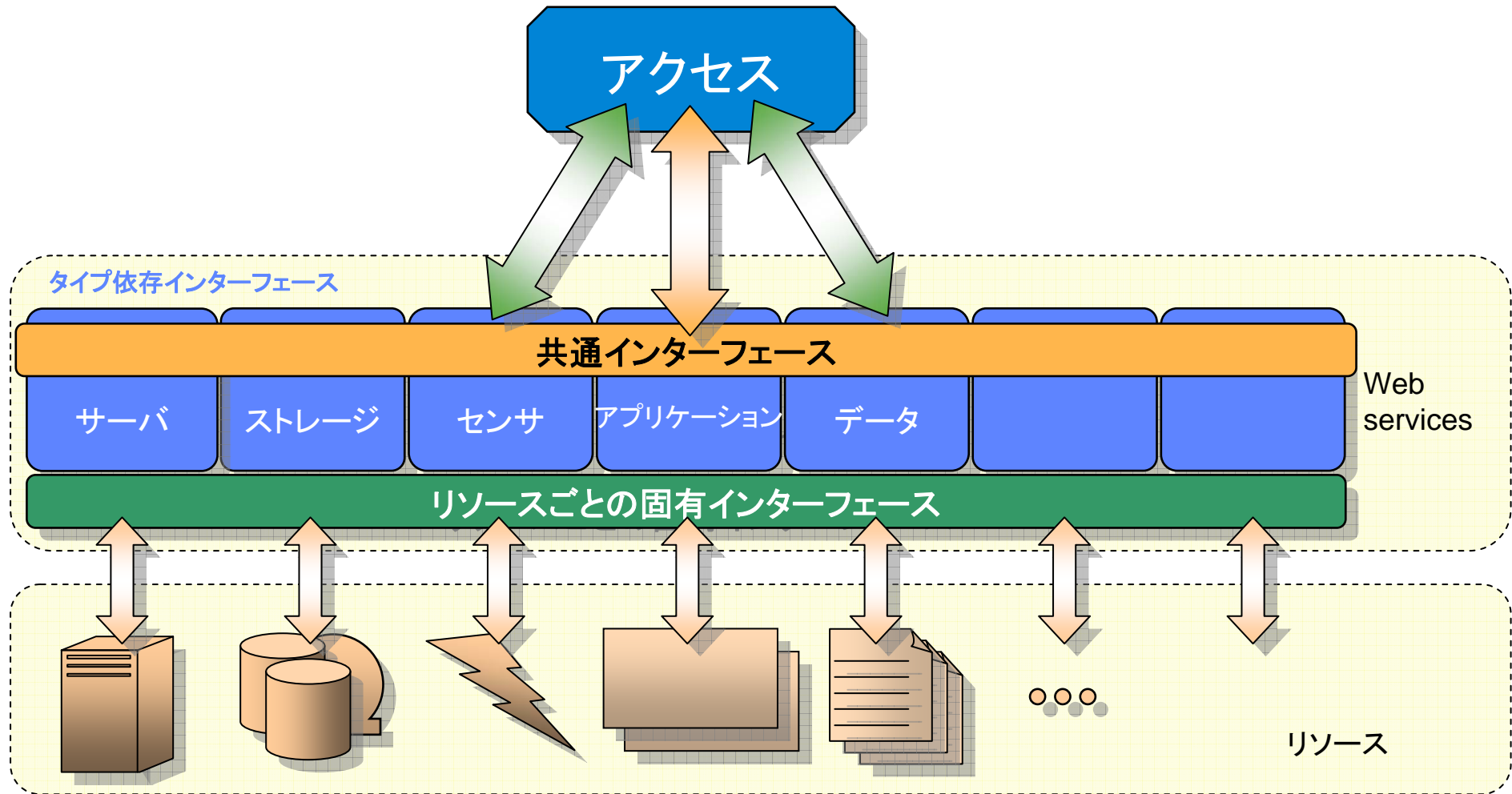
## SOA

- 柔軟性
  - 必要なサービスを動的かつ位置透過に利用できる
- スケーラビリティ
  - 必要に応じてサービスを追加・削除
- 置き換え可能
  - ユーザに知らせず、提供サービスを更新可能
- 高可用性
  - 障害発生時には、代替サービスに切り替え

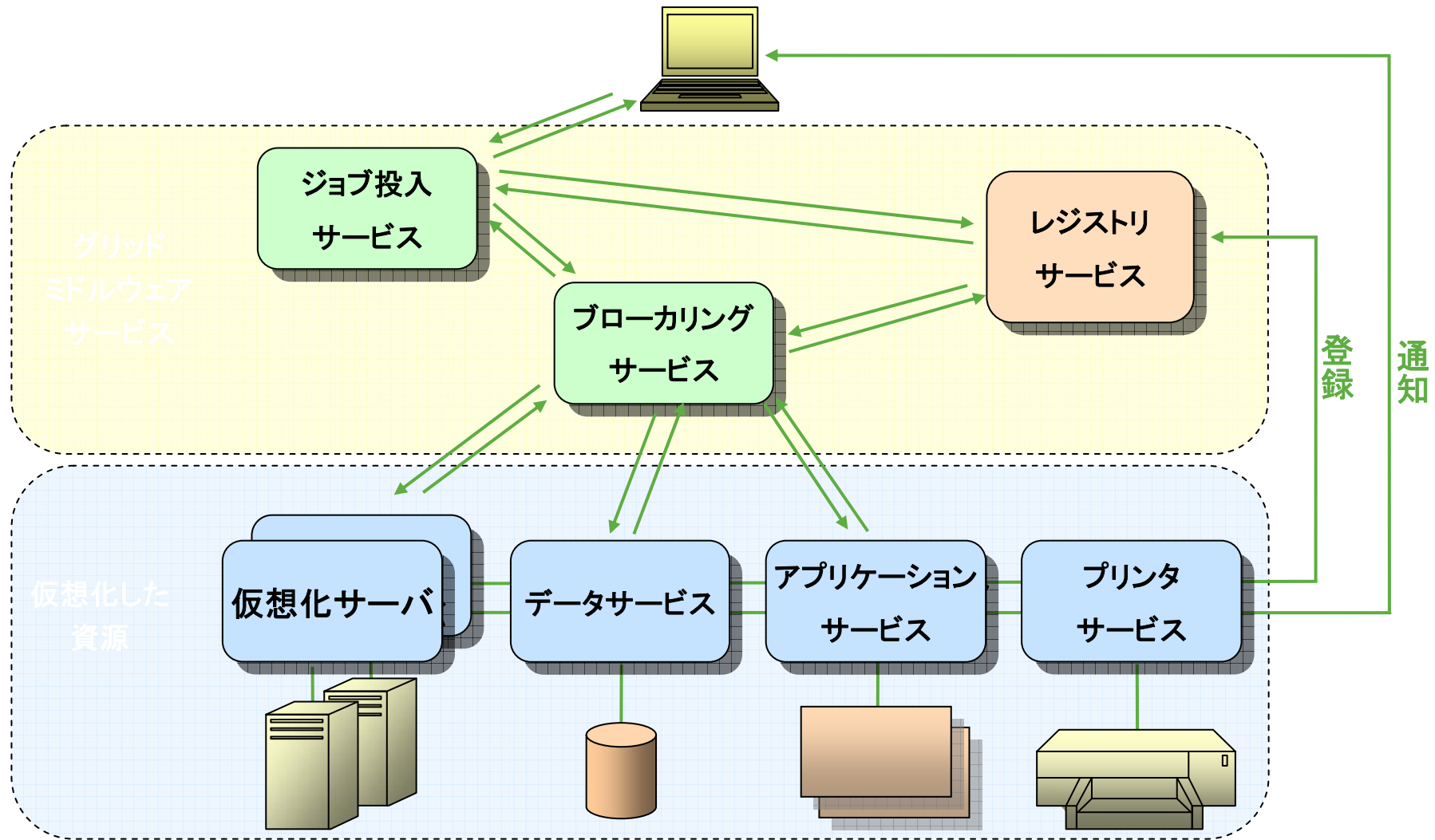
## Web Services

- 相互接続性確保
  - 多数の国際標準仕様
- 有力ベンダが強力に推進
  - 完成度の高い開発ツール
  - 書籍やトレーニングなどの教育支援
- 選択と拡張
  - 利用可能な既存仕様を選択し採用
  - 不足機能だけ、グリッド向けの拡張仕様を開発

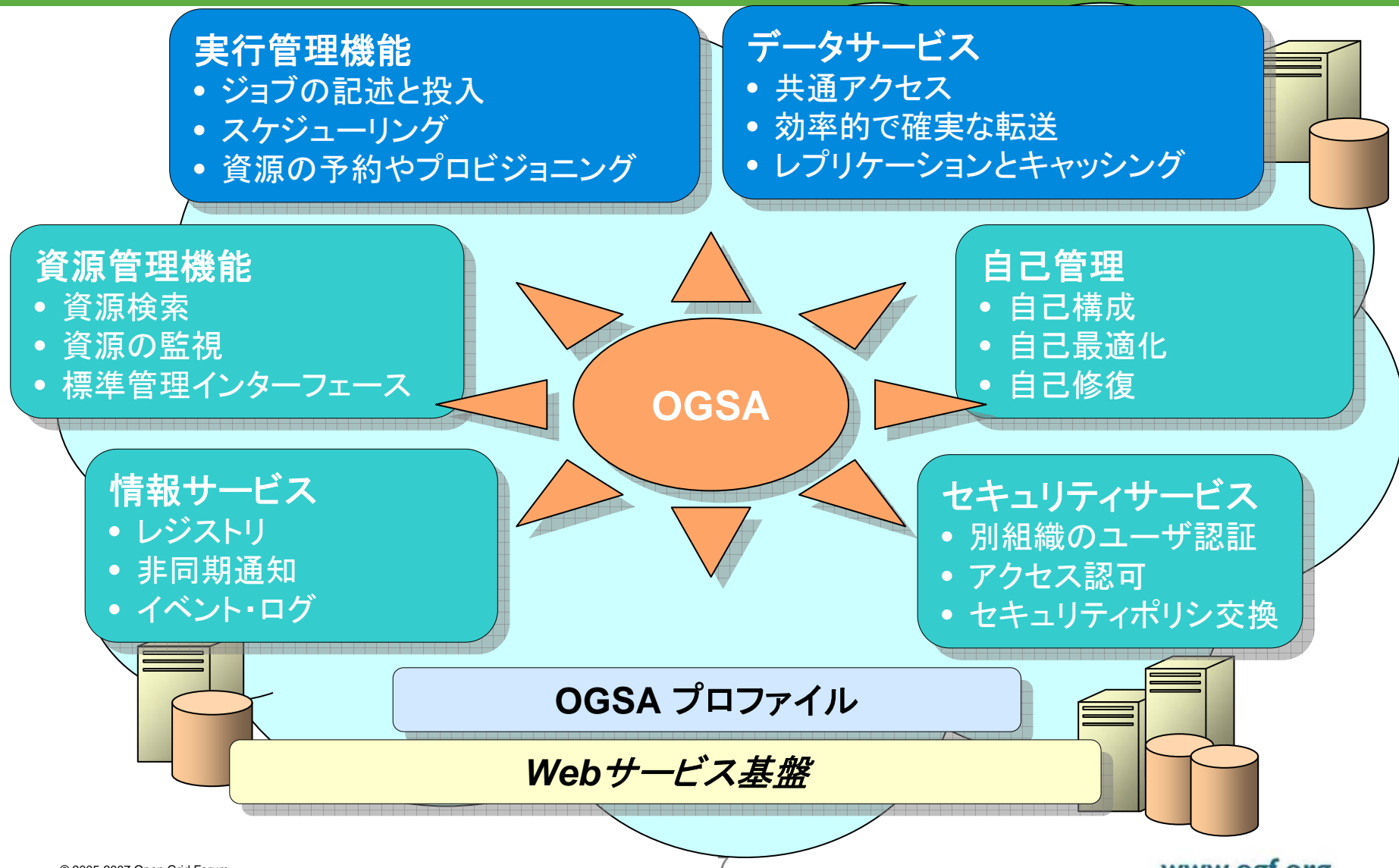
# リソースの仮想化



# サービス指向のグリッド

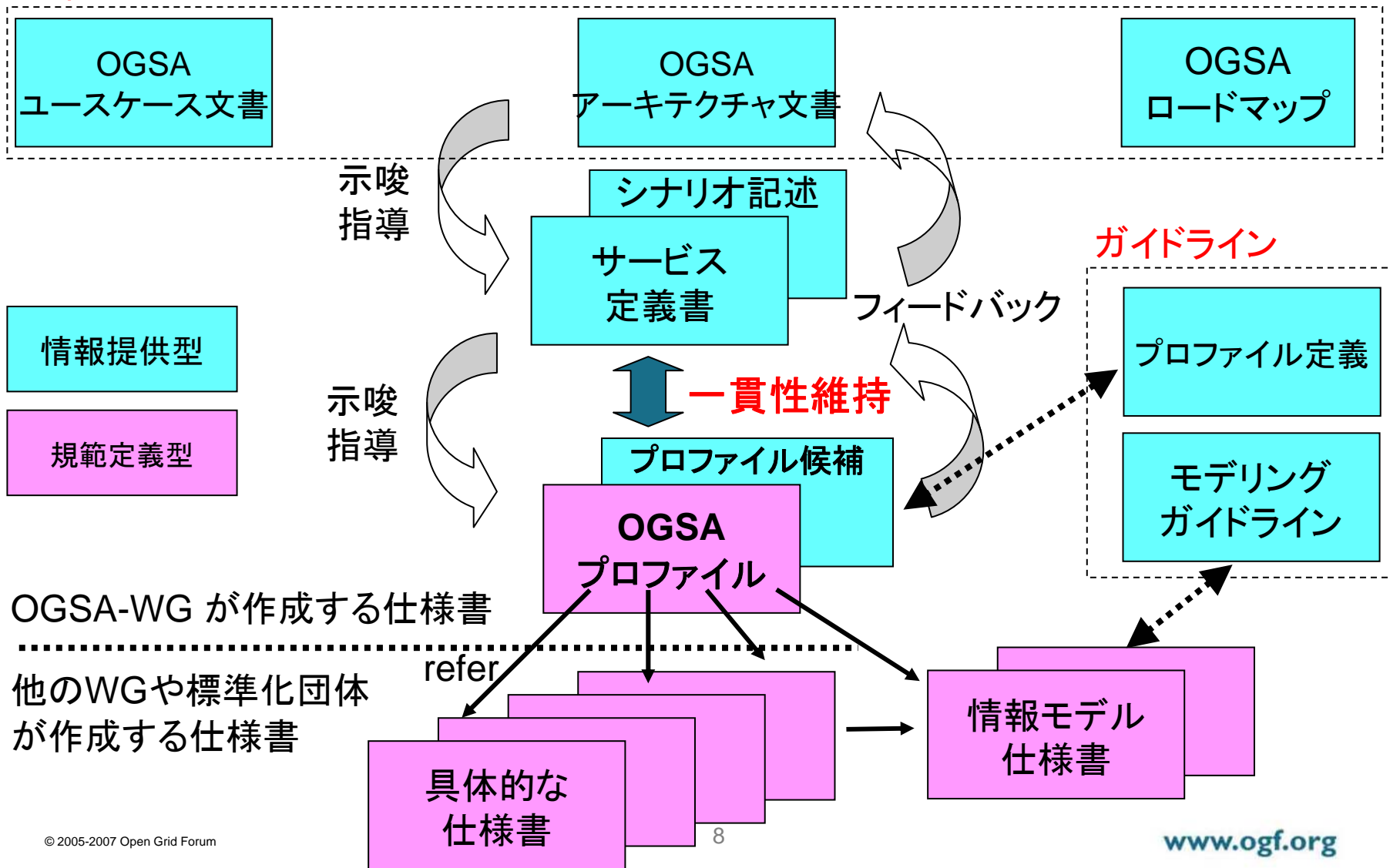


# OGSAの6つの主要機能

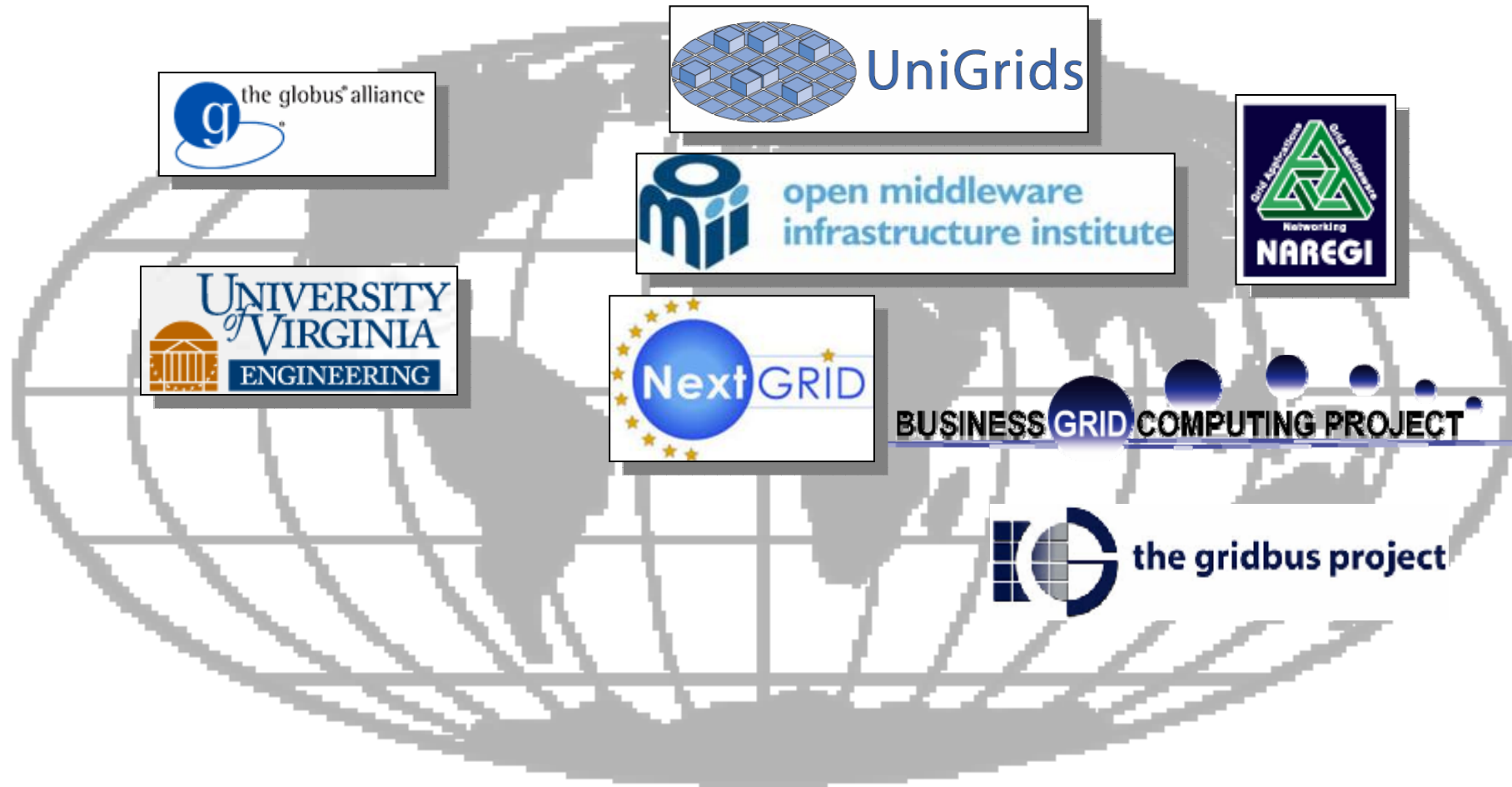


# OGSAの仕様書体系

## 基準文書



# OGSAに準拠したグリッドプロジェクト



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# イベント



- OGF20 (5/7-11)
  - Manchester Central (Manchester, UK)
  - 5 sessions
- OGF20 F2F (5/11)
  - Manchester University
- OGSA-18 (8/13-15)
  - Fujitsu campus (Sunnyvale, CA)
  - 2.5 day (10~15 people)
- 電話会議
  - 毎週火曜日 (7~9am)と木曜日(10pm~midnight)

# OGF20 (5/7-10)



- Express Authentication Profile
  - 最低限の認証機能定義(プロフィール)
- OGSA Profile interop
  - 公開済みのOGSA profileの実装システム間の相互接続試験
- OGSA workflow
  - workflowに関する標準化の必要性・現実性
- OGSA modeling
  - JSDL/BES/GLUEの関係、OGSAにおける位置づけ
- OGSA Information Services
  - Information Services標準化の活動開始

# OGF20 F2F (5/11)

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- OGSA AuthZ (David Chadwick)
- Glossary (Jem Treadwell)
- Info/data modeling (Ellen Stokes)
- OGSA workflow (Chris Kantarjiev)
- General session (Hiro Kishimoto)

# OGSA-18 F2F (8/13-15)

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- Day 1
  - Information Modeling
  - Roadmap review
  - General, Administrative
- Day 2
  - Exp AuthN Profile
  - OGSA-AuthN joint
  - EMS Scenario 1.1
  - OGSA-data update
  - JSDL 2.0 update
  - OGSA Workflow
- Day 3
  - Profile interop
  - Info Services
  - OGSA-DMI
  - Service Level Team
  - Reference Model

# OGSA-WG (Google) Calendar



- Wikiを使った、電話会議スケジュール管理の効率化のため、Google Calendarに移行
  - Agenda, 議事録承認, Action Itemを全てGoogle Calendarで管理
  - 開催通知等は、gmailで送付
    - 不要なReminderが送付されることがある
    - Gmail addressのメーリングリスト登録が必要
    - 多数のメンバからのaccept/reject通知
    - メンバの現地時間ではなく、US CDTで表示
- F2Fのセッション(OGFセッション)も、Google Calendarで管理

# 開催通知の例



Google Calendar BETA

[Sign up for Google Calendar](#)

**What** Roadmap (Chris Jordan)  
**When** Mon Aug 6 18:00 - Mon Aug 6 19:00  
**Where** <http://ogsa.glance.net/> [map](#)  
**Created By** OGSA WG  
**Description** When: 7-8pm EDT, 6-7pm CDT, 4-5pm PDT, 8-9am JST, midnight-1am UK

The dial-in number for Monday;  
US: +1 718 3541071 (New York) or  
+1 408 9616509 (San Jose)  
UK: +44 (0)207 3655269 (London)  
Japan: +81 (0)3 3570 8225 (Tokyo)  
PIN: 4371991  
See more information:  
- <https://forge.gridforum.org/sf/go/wiki1715>

Screen share service:  
URL: <http://ogsa.glance.net/>  
Usage: <https://forge.gridforum.org/sf/go/wiki1584>

Note: \*\* OGF IPR POLICY APPLIES \*\*  
[http://www.ogf.org/About/abt\\_policies.php](http://www.ogf.org/About/abt_policies.php)

- 1) Early discussion
  - Note taker assignment
  - Roll call
  - Agenda bashing
- 2) roadmap document review (Chris)

**Yes, I'm coming**  
[Change your response](#)

▼ **Guests**

**Guest count:** 1 yes, 1 hasn't responded

**Yes (1)**

✓ **ogsa-wg**

**Awaiting response (1)**

OGSA WG

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# GGF19以降に正式公開されたドキュメント



- GFD.106: OGSA™ EMS Architecture Scenarios
  - Andreas Savva, Fujitsu
  - Hiro Kishimoto, Fujitsu
  - Steven Newhouse, University of Southampton
  - Darren Pulsipher, Ovoca, LLC

- Guidelines for Information Modeling for OGSA™ Entities
  - 情報モデルとは何か、APIとの関係は、どうやって定義するかを説明
  - PC ends 10 Sep, 2007
  - Reviewers: BES-WG, DMTF, GLUE-WG, RM-WG, JSDL-WG, HPCP-WG
- Execution Environment and Basic Execution Service Model in OGSA™ Grids
  - OGSA BESの情報モデルを定義し、DMTF CIMの拡張を提案
  - PC ends 10 Sep, 2007
  - Reviewers: Hiro, Ellen, GLUE-WG, RM-WG, JSDL-WG, BES-WG, DMTF

# Document schedule (1)



Document name	Milestones	Plan
OGSA roadmap v1.1	First draft	Nov. 2006
	Ready for PC	Aug. 2007
	Publication	Nov 2007

8月末には、OGF editorに提出し、public commentを開始する予定

completed

delayed

# Document schedule (2)



Document name	Milestones	Plan
OGSA EMS Architecture Scenarios 1.1	First draft	Nov. 2007
	Ready for PC	Feb. 2008
	Publication	Apr. 2008
OGSA EMS Architecture	First draft	Pending
	Ready for PC	
	Publication	

Scenario v1.1を作成することで合意

# Document schedule (3)



Document name	Milestones	Plan
Guidelines for Information Modeling for OGSA Entities (explain necessary process) GFD-I	First draft	Jan. 2006
	Ready for PC	July 2007
	Publication	Oct. 2007
Execution environment and BES model (GFD-I)	First draft	Jan. 2006
	Ready for PC	July 2007
	Publication	Sept. 2007
OGSA™ information modeling architecture (GFD-I)	First draft	Oct. 2007
	Ready for PC	Jan. 2008
	Publication	March 2008

# Document schedule (4)



Document name	Milestones	Plan
Information Modeling in OGSA XML schema and semantics Best practices GFD-R.P Also wiki page	First draft	<b>Cancel</b>
	Ready for PC	
	Publication	
Information model profile document (BES container) Proof of concept	First draft	March 2007
	Ready for PC	<b>Cancel</b>
	Publication	

- The 1<sup>st</sup> document (including wiki) should be superseded by GLUE 2.0
- Current BES document and BES model document covers the 2<sup>nd</sup> one

# Document schedule (5)



Document name	Milestones	Plan
Security Use-Cases for Grid Architectures	First draft	May 2007
	Ready for PC	Oct. 2007
	Publication	Jan. 2008
OGSA Security Profile 2.0 - Secure Addressing	First draft	May 2007
	Ready for PC	Oct. 2007
	Publication	Jan. 2008
OGSA Security Profile 2.0 - Secure Transport	First draft	May 2007
	Ready for PC	Oct. 2007
	Publication	Jan. 2008
OGSA Security Profile 2.0 - Secure SOAP	First draft	May 2007
	Ready for PC	Oct. 2007
	<sup>24</sup> Publication	Jan. 2008

# Document schedule (6)



Document name	Milestones	Plan
Interoperability Testing for OGSA WSRF Basic Profile	First draft	Jan. 2008
	Ready for PC	March 2008
	Publication	May 2008

- Naming is under discussion

completed

delayed

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  - Close to completion
  - Full speed
  - Taking off
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# Tasks: Close to completion

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- Glossary 1.6
  - Jem Treadwell
  - Submit to OGF editor by the end of Aug.
- Roadmap 1.1 – **Monday tele-con**
  - Chris Jordan
  - Submit to OGF editor by the end of Aug.

# Tasks: Full Speed

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- Security – Monday tele-con
  - Express AuthN Profiles
    - Duane Merrill and Andrew Grimshaw
  - Joint calls with OGSA-AuthZ-WG and OGSA-AuthN-WG
- Info/data modeling – Thursday tele-con
  - Ellen Stokes
- OGSA Profile interop – Thursday ad hoc
  - David Snelling
- Information Service interface - Thursday
  - Laurence Field, Felix Ehm, Adrian Toth
- OGSA Primer - Thursday
  - Andrew Grimshaw

# The OGSA Security Profile 2.0

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The “EAP” profiles are architected as extensions to WS-Addressing with the following goals:

1. Profile mechanism for discovering what secure communication actions are required. An action might be:
  - Credential-type for inclusion
  - Transport protocol options
  - Integrity/confidentiality requirements (possibly involving the credentials), etc.
2. Profile how to express and carry out these actions
  - Incorporate de-facto security profiles with additional requirements
3. Profile mechanism for establishing EPR trustworthiness through digital signature

# The OGSA Security Profile 2.0

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The intent of the “EAP” profiles

## IS NOT TO:

- Impose common security mechanisms

## IS TO:

- Enable discovery of common, interoperable security mechanisms (or cleanly identify when interoperability is not possible)

Communities “self-select” profiled, interoperable mechanisms that are appropriate for them

- Easily be extended to accommodate new mechanisms, credentials, etc.

# Secure Addressing

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## *Idea:*

- Apply WS-SecurityPolicy to the extensible `<wsa:Metadata>` portion of the EPR

## *WS-SecurityPolicy:*

- Extension to WS-Policy framework
- New OASIS standard
- Grammar for asserting token types, cryptographic algorithms and mechanisms, including using transport level security

# Secure Transport

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- Defines 4 secure transport bindings to be referenced by name:
  - Server-authenticated TLS w/ Server Certificate
  - Server-authenticated TLS w/o Server Certificate
  - Mutually-authenticated TLS w/ Server Certificate
  - Mutually-authenticated TLS w/o Server Certificate
- If the Server Certificate is present, the Profile mandates hostname verification as per *RFC 2818 – HTTP over TLS*
- TLS/SSL algorithm suites are restricted to those listed in WS-SecurityPolicy

# Secure SOAP

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- Presently defines 2 secure message-level bindings to be referenced by name:
  - Username-token (digest of password, timestamp, and nonce)
  - X.509 Mutual authentication
- All bindings must incorporate specifically named message-protection policies:

```
<wsp:Policy wsu:ID="InputPolicy">  
<wsp:Policy wsu:ID="OutputPolicy">
```

- Potentially empty
- May be extended in the EPR to indicate additional endpoint-specific requirements

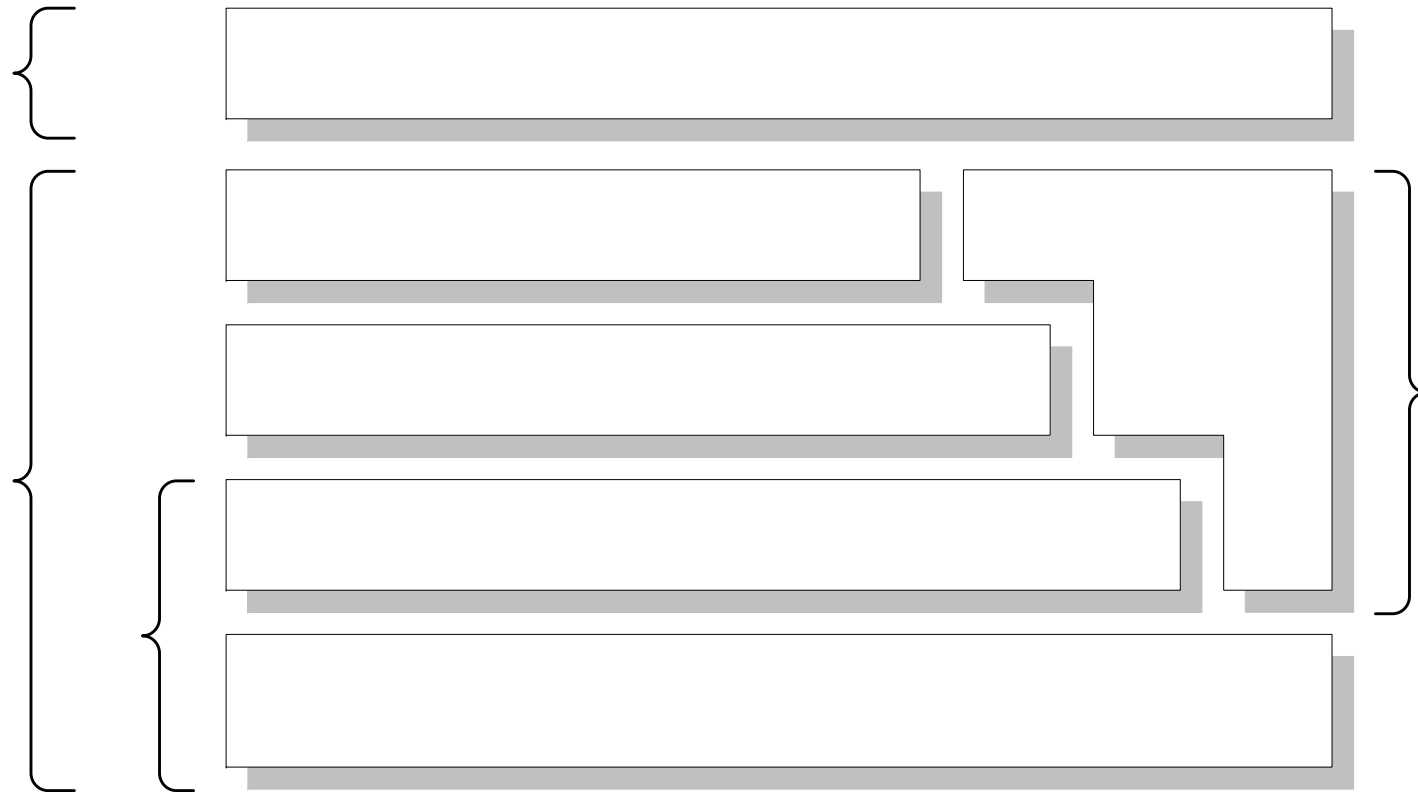
# DMTF



- Distributed Management Task Force
  - システム管理の標準仕様作成を推進している国際標準化団体
    - 100社以上、3,000名以上の技術者が参加
- Common Information Model (CIM)という情報モデル
- インターネットの標準技術を利用して分散コンピューティング環境を管理する Web-Based Enterprise Management (WBEM)
- サーバのハードウェア(およびソフトウェア)管理の標準仕様である System Management Architecture for Server Hardware (SMASH)



# DMTF Technologies Diagram



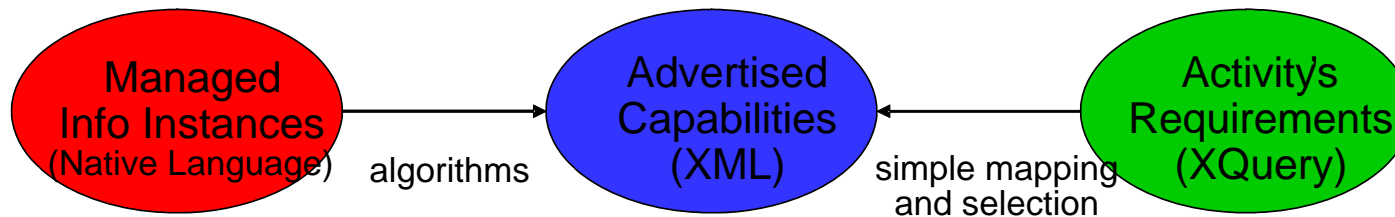
# DMTFとの共同作業



- OGFとDMTFは、共同作業に関する覚書(work register)を取り交わしている
  - Gridが必要とするモデルの拡張を、DMTFにフィードバックし、CIMに反映
- Execution Environment and Basic Execution Service Model in OGSA™ Grids
  - OGSA BESの情報モデルを定義し、DMTF CIMの拡張を提案
  - CIM v2.16で採用された
  - 理事会レベルでは合意していたが、WGには周知されておらず、採用までには予想以上に時間がかかった

# OGSA Model Concept

Capabilities and Requirements have compatible language for easy matching and selection –XML to advertise capabilities and XQuery to express requirements



- Instances info, e.g. CIM
- Granular
- Expresses managed information in the environment
- May be virtualized

- Abstracted and generated from managed information via algorithms
- Simple, meaningful, and user friendly
- Expresses the capabilities of an entity, e.g. container
- May be virtualized
- May be refreshed as managed information changes

- Simple, meaningful, and user friendly
- Expresses an activity's needs
- May be virtualized

# Info/Data Modeling Architecture

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- Reference Model
  - General abstract, in UML
- GLUE
  - Derivation of the Reference Model for specific useful (and used) grid resources/services and
  - Provides those resources/services in an info model in UML and a data model in XML
- OGSA Information/Data Model
  - Architecture to maintain a coherent view among the various model work (at OGF and DMTF)
  - Produce a usable implementation from the distinct pieces, that is, GLUE, BES, JSDL, systems/network management models

# Tasks: Taking off

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- OGSA Workflow – Thursday tel-con
  - Steven McGough
- Service Level Terms – Thursday tel-con
  - Steve McGough and Andrew Grimshaw
- EMS Scenarios 1.1 - Monday tel-con
  - Steven Newhouse and Andreas Savva

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# OGF21 sessions

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- Oct. 15-18 at Grand Hyatt Seattle
- Five sessions (all 90 minutes) requested
  - <https://forge.gridforum.org/sf/go/wiki1834>
- OGSA profiles Interop
- Info/data modeling
- Express Authentication Profiles
- Workflow
- Information Services

# OGF21 F2F meeting

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- Oct. 19 (Fri) at Microsoft Redmond Campus
  - Logistics Info TBD
- Full day (9am-5pm) meeting
- Draft agenda
  - OGSA Primer
  - EMS Scenarios 1.1
  - Service Level Term
  - General / Logistics
- Overflow from OGF21 sessions

# 2007 Winter F2F (OGSA-19)



- November or early December?
- Related event
  - SC07: Nov. 10-16 in Reno
  - MDC: Dec. 3-6 in Santa Clara
  - ...
- Dec. 10-12 in California
- Jan. 7-9 in London (Imperial or FLE)

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# お願い



- Public Comment中のドキュメントを読んで、コメントを寄せてください
  - Execution Environment and Basic Execution Service Model in OGSA™ Grids
  - Guidelines for Information Modeling for OGSA™ Entities

# Thank you

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