

Operating e-Infrastructure

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UKTO Collaboration Meeting
The Cosener's House, Abingdon, UK
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What does operations cover?

Here's one model developed a few years ago largely from operating HEP distributed computing activities for many years.

The lists and examples given on the following slides are only intended to be illustrative and are not exhaustive. This overview is to encourage thinking about these topics.

There are overlaps between categories.

	Task	Service	Funding Source				GridPP WP	Summary	
			UK Requires?	UK Involvement	GridPP FTE	UK Other FTE			EGI to UK FTE
EGI Services Service tasks done in the context of EGI (both by the UK and others) for the benefit of the whole international community	1	1st and 2nd level support	Yes	Contributes				2.33	Summary The UK delivers about 14% of the effort required to provide the global EGI services as follows: 5.3% funded by EGI; 7.3% by GridPP; and 1.3% from other UK sources.
	2	Acceptance criteria	Yes	Feeds back				0.83	
	3	Accounting and Metric Portal	Yes	None				0.50	
	4	Accounting Repository	Yes	Leads	0.75	0.25	0.50	WP-3	
	5	Catchall services	Yes	None				0.67	
	6	Collaboration tools/IT support	Indirectly	None				1.00	
	7	Incident management helpdesk	Yes	None				1.00	
	8	Message Broker Network	Yes	None				0.42	
	9	Monitoring central services	Yes	Feeds back				1.00	
	10	Operations Portal	Yes	None				2.00	
	11	Operations support	Yes	None				0.67	
	12	SAM central services	Yes	None				2.33	
	13	Security coordination	Yes	Co-leads	0.40		0.27	1.00	
	14	Security monitoring and related support tools	Yes	Feeds back				0.33	
	15	Service registry (GOCDB)	Yes	Leads	0.25		0.25	WP-3	
	16	Software provisioning infrastructure	Yes	None				1.58	
	17	Staged Rollout Infrastructure	Yes	None				0.83	
WLCG Services Service tasks required at an international level forming contributions to WLCG (all UK contributions required by, or a direct benefit to, the UK)	18	Running Shared Infrastructure Nodes	Yes	Contributes				WP-1 and 2	Summary The UK contributes a proportionate share of the effort required to perform the international tasks required to run WLCG
	19	Working with Emerging/New Technology Area	Yes	Contributes				WP-1	
	20	Experiment Support & Liasion	Yes	Contributes				WP-3	
	21	Management & Operations Planning for WLCG	Yes	Contributes				WP-3	
	22	S/W Verification with Experiment Workflows	Yes	Contributes				WP-2	
	23	Networking, Data Transport & Metrics	Yes	Contributes				WP-2	
	24	Operations Coordination	Yes	Co-chairs				WP-2	
	25	Security policy, operations & coordination	Yes	Co-leads				WP-1 and 4	
	26	Software Support for Experiments	Yes	Contributes				WP-2	
	27	Middleware Staged Rollout	Yes	Contributes				WP-2	
	28	Tier-0 Functional Services	Yes	Phaseing Out				WP-1	
	29	Tier-1 Functional Services	Yes	Contributes				WP-1	
	30	Tier-2 Functional Services	Yes	Contributes				WP-2	
	31	Enabling Tools and Applications	Indirectly	None					
UK Services Service tasks required at a national level to run the production infrastructure	32	Accounting - Benchmarking & Services	Yes	Core	0.11			WP-3	Summary A set of national tasks need to be undertaken by all participants in WLCG
	33	Certificate Authority CA	Yes	Core		0.5			
	34	Data Support for Experiments & Sites	Yes	Core	1			WP-1 and 2	
	35	Documentation & Training	Yes	Core	0.5			WP-2	
	36	Infrastructure services & testing	Yes	Core	1.6			WP-1 and 2	
	37	Interoperation across e-Infrastructures	Yes	Core	0.2			WP-1 and 2	
	38	Infrastructure Monitoring	Yes	Core	1.5			WP-2	
	39	Non-LHC experiment support	Yes	Core	1.2			WP-2	
	40	'On-Duty' Operations Oversight	Yes	Core	0.3	0.1		WP-1 and 2	
	41	Coordination & Management	Yes	Core	0.6			WP-3	
	42	Running Regional Tools	Yes	Core	0.65			WP-2	
	43	Security Evaluations & Response	Yes	Core	1.25			WP-1 and 2	
	44	Support for Tier-3s	Yes	Core	0.2			WP-2	
	45	Ticket Follow-up	Yes	Core	0.19	0.01		WP-2	

Total effort contributed by WLCG partners is estimated to be 442 FTE. The UK provides 10.3% of this (8.7% or 38.5 FTE funded from GridPP and 1.5% funded by the Tier-2 institutes)

Support

Who?

- Users of the resources
- Potential/new users
- Staff operating the infrastructure
- Surrounding groups impacted by the infrastructure

How?

- Ticketing system
- Support team
- Documentation

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	20	Experiment Support & Liasion	Yes	Contributes	Total effort contributed by WLCG partners is estimated to be 442 FTE.					WP-3
	21	Management & Operations Planning for WLCG	Yes	Contributes	The UK provides 10.3% of this (8.7% or 38.5 FTE					WP-3
	22	S/W Verification with Experiment Workflows	Yes	Contributes	funded from GridPP and					WP-2
	23	Networking, Data Transport & Metrics	Yes	Contributes	1.5% funded by the Tier-2 institutes)					WP-2
	24	Operations Coordination	Yes	Co-chairs						WP-2
	25	Security policy, operations & coordination	Yes	Co-leads						WP-1 and 4
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Accounting/usage

Who?

- Management
- Funders
- Organisations
- Users

Why?

- Fair use
- Reporting progress
- Understanding usage

How?

- Native tools/queries
- Parsing logs -> repo
- Benchmarking

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(Common) Service provision

Who?

- Users
- Organisations

Why?

- Technical competence
- Economies

How/examples?

- Job submission system
- Catalogues
- Helpdesk
- Information portal
- Certificate Authority
- Wiki

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Security

For who?

- Providers
- Users (data)
- Administrators

Why?

- Resource targets.
- Decrease disruption
- Ensure proper use

How?

- Monitoring (Pakiti)
- Network monitoring
- Security Ops Centre
- Tracking OS/MW patching

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Monitoring

For who?

- Users
- Administrators

Why?

- Maintain availability
- Spot issues before users
- Maximise utilisation
- Improve efficiency

How?

- Automated checks
- Metric based reports
- Team/on-duty checks

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	45	Ticket Follow-up	Yes	Core	0.19	0.01				WP-2

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“Software”

For who?

- Users
- Service providers
- Operators

Why?

- New releases
- New components
- Running on new platforms

How?

- Repositories
- Verification
- Staged rollout
- Containerisation/images

	Task	Service	Funding Source				GridPP WP		
			UK Requires?	UK Involvement	GridPP FTE	UK Other EGI to UK Non-UK FTE			
EGI Services Service tasks done in the context of EGI (both by the UK and others) for the benefit of the whole international community	1	1st and 2nd level support	Yes	Contributes				2.33	Summary The UK delivers about 14% of the effort required to provide the global EGI services as follows: 5.3% funded by EGI; 7.3% by GridPP; and 1.3% from other UK sources.
	2	Acceptance criteria	Yes	Feeds back				0.83	
	3	Accounting and Metric Portal	Yes	None				0.50	
	4	Accounting Repository	Yes	Leads	0.75	0.25	0.50	WP-3	
	5	Catchall services	Yes	None				0.67	
	6	Collaboration tools/IT support	Indirectly	None				1.00	
	7	Incident management helpdesk	Yes	None				1.00	
	8	Message Broker Network	Yes	None				0.42	
	9	Monitoring central services	Yes	Feeds back				1.00	
	10	Operations Portal	Yes	None				2.00	
	11	Operations support	Yes	None				0.67	
	12	SAM central services	Yes	None				2.33	
	13	Security coordination	Yes	Co-leads	0.40		0.27	1.00	
	14	Security monitoring and related support tools	Yes	Feeds back				0.33	
	15	Service registry (GOCDB)	Yes	Leads	0.25		0.25	WP-3	
	16	Software provisioning infrastructure	Yes	None				1.58	
	17	Staged Rollout Infrastructure	Yes	None				0.83	
WLCG Services Service tasks required at an international level forming contributions to WLCG (all UK contributions required by, or a direct benefit to, the UK)	18	Running Shared Infrastructure Nodes	Yes	Contributes				WP-1 and 2	Summary The UK contributes a proportionate share of the effort required to perform the international tasks required to run WLCG
	19	Working with Emerging/New Technology Area	Yes	Contributes				WP-1	
	20	Experiment Support & Liasion	Yes	Contributes				WP-3	
	21	Management & Operations Planning for WLCG	Yes	Contributes				WP-3	
	22	S/W Verification with Experiment Workflows	Yes	Contributes				WP-2	
	23	Networking, Data Transport & Metrics	Yes	Contributes				WP-2	
	24	Operations Coordination	Yes	Co-chairs				WP-2	
	25	Security policy, operations & coordination	Yes	Co-leads				WP-1 and 4	
	26	Software Support for Experiments	Yes	Contributes				WP-2	
	27	Middleware Staged Rollout	Yes	Contributes				WP-2	
	28	Tier-0 Functional Services	Yes	Phaseing Out				WP-1	
	29	Tier-1 Functional Services	Yes	Contributes				WP-1	
	30	Tier-2 Functional Services	Yes	Contributes				WP-2	
	31	Enabling Tools and Applications	Indirectly	None					
UK Services Service tasks required at a national level to run the production infrastructure	32	Accounting - Benchmarking & Services	Yes	Core	0.11			WP-3	Summary A set of national tasks need to be undertaken by all participants in WLCG
	33	Certificate Authority CA	Yes	Core		0.5			
	34	Data Support for Experiments & Sites	Yes	Core	1			WP-1 and 2	
	35	Documentation & Training	Yes	Core	0.5			WP-2	
	36	Infrastructure services & testing	Yes	Core	1.6			WP-1 and 2	
	37	Interoperation across e-Infrastructures	Yes	Core	0.2			WP-1 and 2	
	38	Infrastructure Monitoring	Yes	Core	1.5			WP-2	
	39	Non-LHC experiment support	Yes	Core	1.2			WP-2	
	40	'On-Duty' Operations Oversight	Yes	Core	0.3	0.1		WP-1 and 2	
	41	Coordination & Management	Yes	Core	0.6			WP-3	
	42	Running Regional Tools	Yes	Core	0.65			WP-2	
	43	Security Evaluations & Response	Yes	Core	1.25			WP-1 and 2	
	44	Support for Tier-3s	Yes	Core	0.2			WP-2	
	45	Ticket Follow-up	Yes	Core	0.19	0.01		WP-2	

Total effort contributed by WLCG partners is estimated to be 442 FTE. The UK provides 10.3% of this (8.7% or 38.5 FTE funded from GridPP and 1.5% funded by the Tier-2 institutes)

“Core” Infrastructure

Who?

- Providers
- Users

Why?

- Instances shared
- Reduce maintenance
- Expertise

How?

- Run in VMs
- Repositories
- Monitoring services
- Dashboards
- Federation services
- Portals
- Information registry
- CA

	Task	Service	Funding Source				GridPP WP	Summary	
			UK Requires?	UK Involvement	GridPP FTE	UK Other FTE			EGI to UK FTE
EGI Services Service tasks done in the context of EGI (both by the UK and others) for the benefit of the whole international community	1	1st and 2nd level support	Yes	Contributes				2.33	Summary The UK delivers about 14% of the effort required to provide the global EGI services as follows: 5.3% funded by EGI; 7.3% by GridPP; and 1.3% from other UK sources.
	2	Acceptance criteria	Yes	Feeds back				0.83	
	3	Accounting and Metric Portal	Yes	None				0.50	
	4	Accounting Repository	Yes	Leads	0.75	0.25	0.50	WP-3	
	5	Catchall services	Yes	None				0.67	
	6	Collaboration tools/IT support	Indirectly	None				1.00	
	7	Incident management helpdesk	Yes	None				1.00	
	8	Message Broker Network	Yes	None				0.42	
	9	Monitoring central services	Yes	Feeds back				1.00	
	10	Operations Portal	Yes	None				2.00	
	11	Operations support	Yes	None				0.67	
	12	SAM central services	Yes	None				2.33	
	13	Security coordination	Yes	Co-leads	0.40		0.27	1.00	
	14	Security monitoring and related support tools	Yes	Feeds back				0.33	
	15	Service registry (GOCDB)	Yes	Leads	0.25		0.25	WP-3	
	16	Software provisioning infrastructure	Yes	None				1.58	
	17	Staged Rollout Infrastructure	Yes	None				0.83	
WLCG Services Service tasks required at an international level forming contributions to WLCG (all UK contributions required by, or a direct benefit to, the UK)	18	Running Shared Infrastructure Nodes	Yes	Contributes				WP-1 and 2	Summary The UK contributes a proportionate share of the effort required to perform the international tasks required to run WLCG
	19	Working with Emerging/New Technology Area	Yes	Contributes				WP-1	
	20	Experiment Support & Liasion	Yes	Contributes				WP-3	
	21	Management & Operations Planning for WLCG	Yes	Contributes				WP-3	
	22	S/W Verification with Experiment Workflows	Yes	Contributes				WP-2	
	23	Networking, Data Transport & Metrics	Yes	Contributes				WP-2	
	24	Operations Coordination	Yes	Co-chairs				WP-2	
	25	Security policy, operations & coordination	Yes	Co-leads				WP-1 and 4	
	26	Software Support for Experiments	Yes	Contributes				WP-2	
	27	Middleware Staged Rollout	Yes	Contributes				WP-2	
	28	Tier-0 Functional Services	Yes	Phaseing Out				WP-1	
	29	Tier-1 Functional Services	Yes	Contributes				WP-1	
	30	Tier-2 Functional Services	Yes	Contributes				WP-2	
	31	Enabling Tools and Applications	Indirectly	None					
UK Services Service tasks required at a national level to run the production infrastructure	32	Accounting - Benchmarking & Services	Yes	Core	0.11			WP-3	Summary A set of national tasks need to be undertaken by all participants in WLCG
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	34	Data Support for Experiments & Sites	Yes	Core	1			WP-1 and 2	
	35	Documentation & Training	Yes	Core	0.5			WP-2	
	36	Infrastructure services & testing	Yes	Core	1.6			WP-1 and 2	
	37	Interoperation across e-Infrastructures	Yes	Core	0.2			WP-1 and 2	
	38	Infrastructure Monitoring	Yes	Core	1.5			WP-2	
	39	Non-LHC experiment support	Yes	Core	1.2			WP-2	
	40	'On-Duty' Operations Oversight	Yes	Core	0.3	0.1		WP-1 and 2	
	41	Coordination & Management	Yes	Core	0.6			WP-3	
	42	Running Regional Tools	Yes	Core	0.65			WP-2	
	43	Security Evaluations & Response	Yes	Core	1.25			WP-1 and 2	
	44	Support for Tier-3s	Yes	Core	0.2			WP-2	
	45	Ticket Follow-up	Yes	Core	0.19	0.01		WP-2	

Interoperation, policy & management

Who?

- Management
- Users
- Organisations
- Administrators

Why?

- Coordination essential
- Best practice
- Contractual implications

How?

- Meetings
- Joint policy development
- Adoption of best practice from international WGs

	Task	Service	Funding Source				GridPP WP	Summary	
			UK Requires?	UK Involvement	GridPP FTE	UK Other FTE			EGI to UK FTE
EGI Services Service tasks done in the context of EGI (both by the UK and others) for the benefit of the whole international community	1	1st and 2nd level support	Yes	Contributes				2.33	Summary The UK delivers about 14% of the effort required to provide the global EGI services as follows: 5.3% funded by EGI; 7.3% by GridPP; and 1.3% from other UK sources.
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	6	Collaboration tools/IT support	Indirectly	None				1.00	
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	9	Monitoring central services	Yes	Feeds back				1.00	
	10	Operations Portal	Yes	None				2.00	
	11	Operations support	Yes	None				0.67	
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	20	Experiment Support & Liasion	Yes	Contributes				WP-3	
	21	Management & Operations Planning for WLCG	Yes	Contributes				WP-3	
	22	S/W Verification with Experiment Workflows	Yes	Contributes				WP-2	
	23	Networking, Data Transport & Metrics	Yes	Contributes				WP-2	
	24	Operations Coordination	Yes	Co-chairs				WP-2	
	25	Security policy, operations & coordination	Yes	Co-leads				WP-1 and 4	
	26	Software Support for Experiments	Yes	Contributes				WP-2	
	27	Middleware Staged Rollout	Yes	Contributes				WP-2	
	28	Tier-0 Functional Services	Yes	Phaseing Out				WP-1	
	29	Tier-1 Functional Services	Yes	Contributes				WP-1	
	30	Tier-2 Functional Services	Yes	Contributes				WP-2	
	31	Enabling Tools and Applications	Indirectly	None					
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	36	Infrastructure services & testing	Yes	Core	1.6			WP-1 and 2	
	37	Interoperation across e-Infrastructures	Yes	Core	0.2			WP-1 and 2	
	38	Infrastructure Monitoring	Yes	Core	1.5			WP-2	
	39	Non-LHC experiment support	Yes	Core	1.2			WP-2	
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	42	Running Regional Tools	Yes	Core	0.65			WP-2	
	43	Security Evaluations & Response	Yes	Core	1.25			WP-1 and 2	
	44	Support for Tier-3s	Yes	Core	0.2			WP-2	
	45	Ticket Follow-up	Yes	Core	0.19	0.01		WP-2	

Ad-hoc/development

Who?

- Users
- Organisations
- Administrators

Why?

- Technology evolves
- Approaches evolve

How?

- Pilot new approaches
- Test queues
- Landscape reviews
-

	Task	Service	Funding Source				GridPP WP	Summary					
			UK Requires?	UK Involvement	GridPP FTE	UK Other EGI to UK FTE			Non-UK FTE				
EGI Services Service tasks done in the context of EGI (both by the UK and others) for the benefit of the whole international community	1	1st and 2nd level support	Yes	Contributes				2.33	Summary The UK delivers about 14% of the effort required to provide the global EGI services as follows: 5.3% funded by EGI; 7.3% by GridPP; and 1.3% from other UK sources.				
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	4	Accounting Repository	Yes	Leads	0.75	0.25	0.50	WP-3					
	5	Catchall services	Yes	None				0.67					
	6	Collaboration tools/IT support	Indirectly	None				1.00					
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	8	Message Broker Network	Yes	None				0.42					
	9	Monitoring central services	Yes	Feeds back				1.00					
	10	Operations Portal	Yes	None				2.00					
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	19	Working with Emerging/New Technology Area	Yes	Contributes				WP-1					
	20	Experiment Support & Liaison	Yes	Contributes	Total effort contributed by WLCG partners is estimated to be 442 FTE. The UK provides 10.3% of this (8.7% or 38.5 FTE funded from GridPP and 1.5% funded by the Tier-2 institutes)					WP-3			
	21	Management & Operations Planning for WLCG	Yes	Contributes						WP-3			
	22	S/W Verification with Experiment Workflows	Yes	Contributes						WP-2			
	23	Networking, Data Transport & Metrics	Yes	Contributes						WP-2			
	24	Operations Coordination	Yes	Co-chairs						WP-2			
	25	Security policy, operations & coordination	Yes	Co-leads						WP-1 and 4			
	26	Software Support for Experiments	Yes	Contributes						WP-2			
	27	Middleware Staged Rollout	Yes	Contributes						WP-2			
	28	Tier-0 Functional Services	Yes	Phaseing Out						WP-1			
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	38	Infrastructure Monitoring	Yes	Core	1.5			WP-2					
	39	Non-LHC experiment support	Yes	Core	1.2			WP-2					
	40	'On-Duty' Operations Oversight	Yes	Core	0.3	0.1		WP-1 and 2					
	41	Coordination & Management	Yes	Core	0.6			WP-3					
	42	Running Regional Tools	Yes	Core	0.65			WP-2					
43	Security Evaluations & Response	Yes	Core	1.25			WP-1 and 2						
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45	Ticket Follow-up	Yes	Core	0.19	0.01		WP-2						

What else?

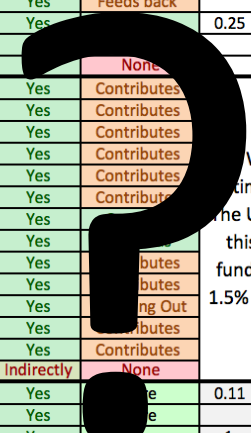
Who?

Why?

How?

- Support
- Accounting/usage
- (Common) Service provision
- Security
- Monitoring
- "Software"
- "Core" infrastructure
- Interoperation, policy & management
- Ad-hoc/Development

	Task	Service	Funding Source				GridPP WP	Summary	
			UK Requires?	UK Involvement	GridPP FTE	UK Other FTE			EGI to UK FTE
EGI Services Service tasks done in the context of EGI (both by the UK and others) for the benefit of the whole international community	1	1st and 2nd level support	Yes	Contributes				2.33	Summary The UK delivers about 14% of the effort required to provide the global EGI services as follows: 5.3% funded by EGI; 7.3% by GridPP; and 1.3% from other UK sources.
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To get the discussion started based on a quick survey... current landscape

AREA	UKTO		EUCLID	UKAEA	STFC SCD/ ALC/SIS	DIAMOND	ALIGO	LSST	SKA/Others	HEP	
	Now	Future									
Support			Started	Exists	Exists	FP	Exists	Started	Needed	Exists	Exists
Accounting			Needed	Needed	Exists	Exists	Exists	Needed	Needed	Exists	Exists
Services			Exists					Needed		Exists	Exists
Security				!	Exists	Started	Exists		Needed	Exists	Exists
Monitoring			Started	Started	Exists	Exists			Needed	Exists	Exists
"Software"			Exists	Started	Exists	Exists	Started	Needed	Needed	Exists	Exists
"Core"									Needed	Exists	Exists
Policy/interoperation/ management					Exists	Exists			Needed	Exists	Exists
Ad-hoc/Dev							Exists		Needed	Exists	Exists
Other											

- Exists
- Started
- Needed