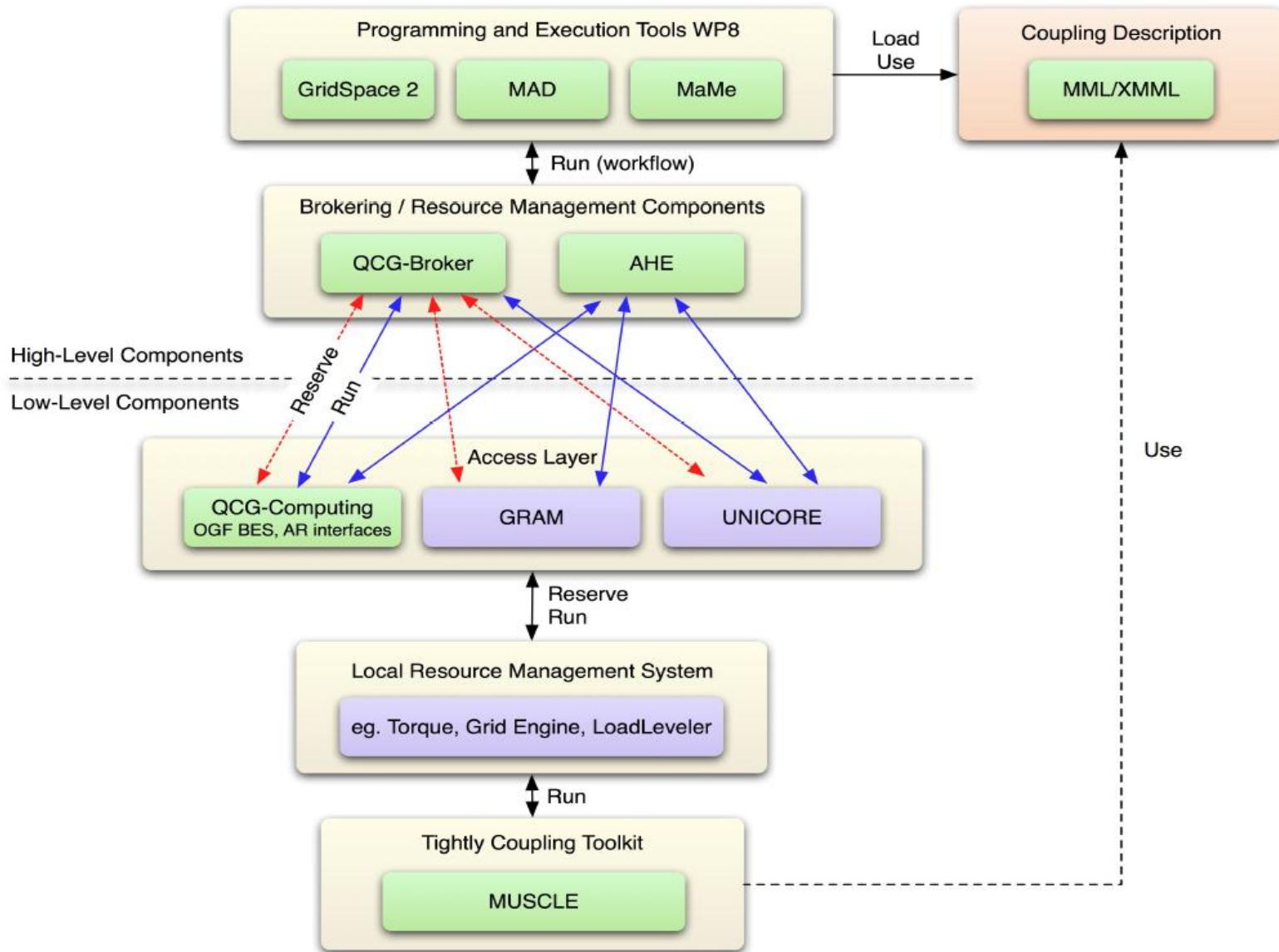# Software in MAPPER Sustainability aspects
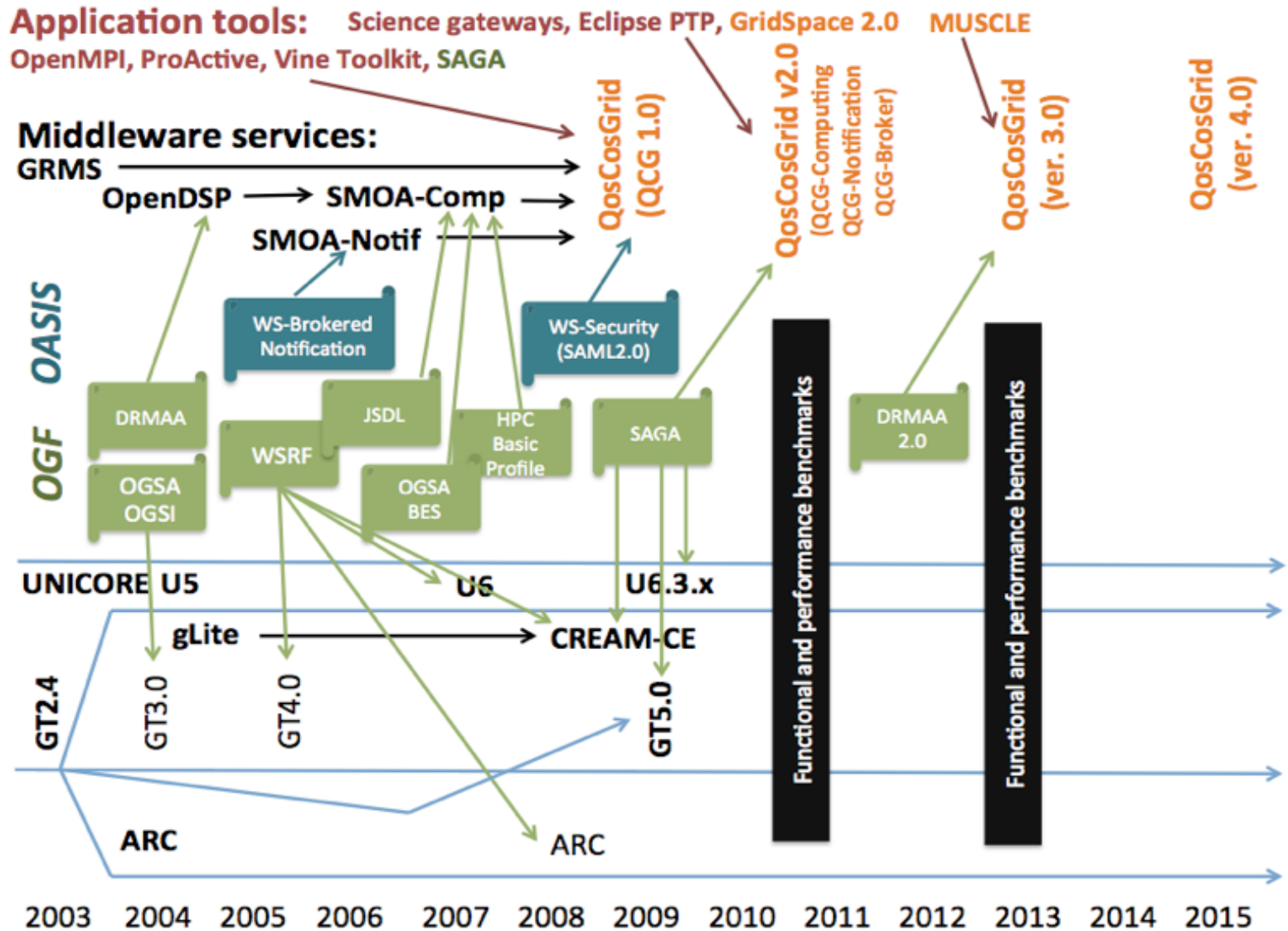
Krzysztof Kurowski, Mariusz Mamoński, Tomek Piontek and Bartosz Bosak

17.01.2012

Software components

Standards (middleware)

Application tools: Science gateways, Eclipse PTP, GridSpace 2.0 MUSCLE
OpenMPI, ProActive, Vine Toolkit, SAGA

Middleware services:
GRMS
OpenDSP → SMOA-Comp
SMOA-Notif

QosCosGrid (QCG 1.0)
QosCosGrid v2.0 (QCG-Computing QCG-Notification QCG-Broker)
QosCosGrid (ver. 3.0)
QosCosGrid (ver. 4.0)

OASIS

WS-Brokered Notification

WS-Security (SAML2.0)

OGF

DRMAA
OGSA OGSI
WSRF
JSDL
OGSA BES
HPC Basic Profile
SAGA
DRMAA 2.0

Functional and performance benchmarks
Functional and performance benchmarks

UNICORE U5   U6   U6.3.x

gLite → CREAM-CE

GT2.4   GT3.0   GT4.0   GT5.0

ARC   ARC
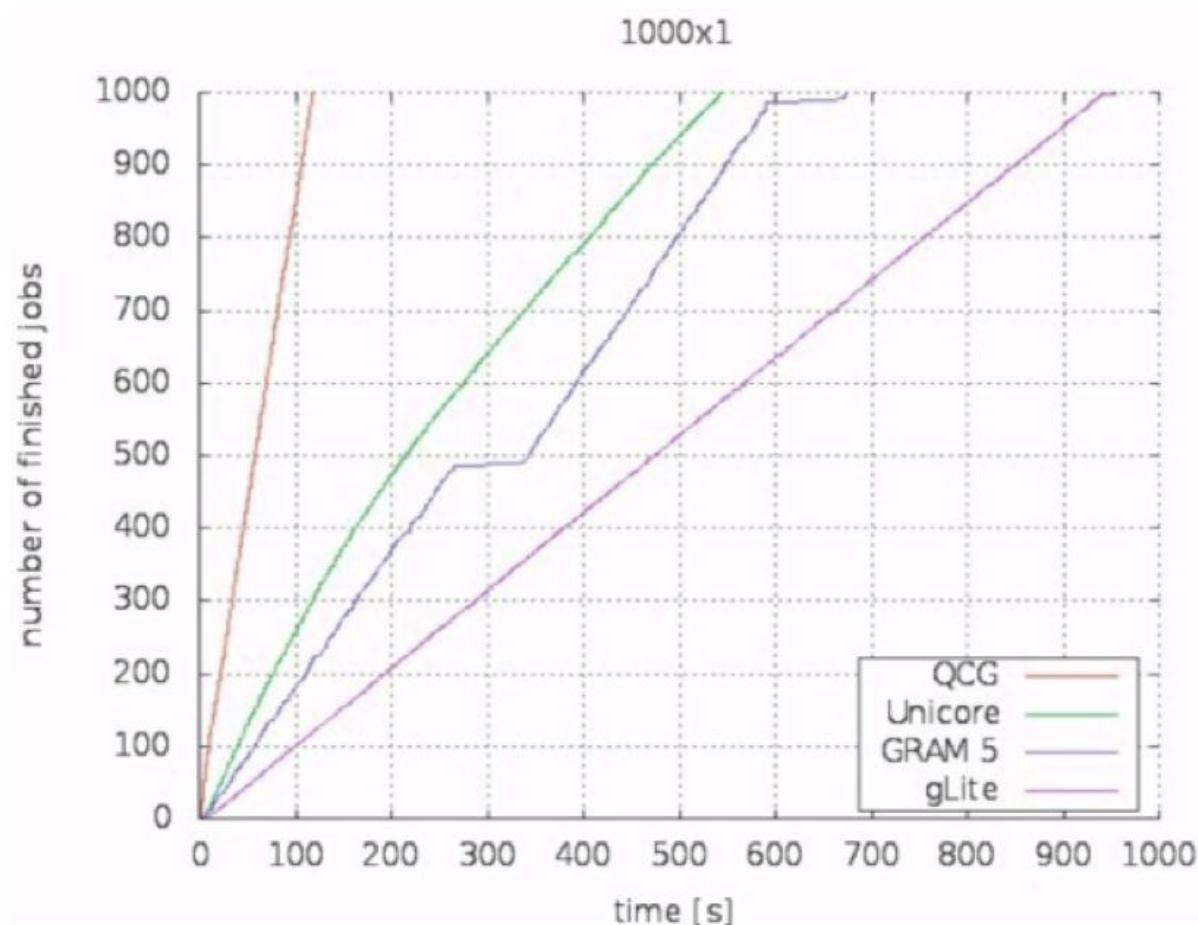
2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015

3

Efficiency and new capabilities

- Example benchmark of remote job submissions using the OGF SAGA testsuit and BES interfaces supported by different middleware

- Note that QCG middleware supports also additional features, in particular Advance Reservation and co-allocation to synchronize in time access to distributed computing resources

Fast vs. Deep tracks (2011)

	Fast Track Components	Deep Track Components	Partners
Users tools (coupling and execution env.)	MAD & MaMe	MAD & MaMe	Cyfronet
	Vine Toolkit		PSNC
	SAGA		open source comm.
Interoperability layer	Nagios	UMD, Accounting	open source comm.
	AHE	AHE	UCL
	QCG-Broker	QCG-Broker	PSNC
	GridSpace	GridSpace	Cyfronet
e-Infrastructure (middleware building blocks)	MPI	QCG-OMPI, MPWide	open source comm.
	MUSCLE	MUSCLE	UvA / PSNC
	QCG-Comp	QCG-Computing/Notif	PSNC
	UNICORE		Julich
	GridFTP		open source comm.