	Northumbria University								
Periodic Review Report Template									
Faculty	Engineering and Environment								
Discipline Name	Engineering, Mathematics, Information and Communication Management								
Date of Review	5 and 6 March 2014								
Review Panel (approved by Review Sub- Committee)	Alan Gregg, Academic Co-ordinator Frameworks, Academic Quality Julie Seed, Director of Student Experience and Enhancement, Faculty of Health and Life Sciences Dr Tony Mellor, University Teaching Fellow Department of Geography, Faculty of Engineering and Environment Nicole Pegg, Students' Union Vice President Academic Affairs Professor Michael Bramhall, Assistant Dean Academic Development, Faculty of Arts Computing Engineering and Science, Sheffield Hallam University								
Method of Review	This review was conducted using the periodic review procedure defined in Northumbria's Review Handbook (September 2013 version), available from http://northumbria.ac.uk/sd/central/ar/qualitysupport/review/intrev/								

The Faculty aims to provide research inspired undergraduate and postgraduate programmes designed and delivered to ensure graduates are:

- Equipped with contemporary knowledge of theory, research and professional practice related to their programme of study.
- Able to utilise their knowledge through critical analysis to create new knowledge and / or innovative approaches to practise proportionate to their level of study.
- Equipped for employment or further study through transferrable lifelong learning, employability and research skills.
- Culturally and ethically aware and equipped to contribute positively to a diverse and global community.

In 2010 the disciplines of Geography and Environmental Management merged with the School of the Built Environment to form the School of the Built & Natural Environment. Further restructuring has resulted in the formation of the Faculty of Engineering and Environment merging the School of the Built and Natural Environment with the School of Computing, Engineering and Information Sciences. This review focuses solely on the programmes in the disciplines of Engineering, Mathematics, Information and Communication Management which are located in three Departments: Mechanical and Construction Engineering, Physics and Electrical Engineering, and Mathematics and Information Sciences. The Department of Mathematics and Information Sciences (MIS) deliver programmes in Mathematics, and Information and Communications Management (ICM). The Mathematics programmes are practice-based concentrating on the subject's applicability to the real world with a view to graduate employment prospects. In the Mathematics with Business Management programme, two thirds of the Mathematics degree is combined with one third of the Business Management degree (offered by Newcastle Business School).. The ICM programmes aim to produce graduates who can design, implement, manage and develop communication strategies, systems and processes in organisations across public and commercial sectors. The Department of Mechanical and Construction Engineering (MCE) delivers programmes in building services, civil and architectural engineering, construction and building design management, manufacturing and product design, mechanical engineering and pipeline integrity management. Our students, staff and researchers work to solve some of society's most pressing problems: how to generate cleaner and more sustainable energy and the buildings that utilise it; how to protect our infrastructure; and how to improve everything from the smallest component to the largest buildings and aircraft. The Department undertakes a broad range of provision from Extended Degree programmes (with level 3 entry) to novel industry facing MSc programmes supported by a strong focus upon the needs of professional practice and underpinned by staff research interests.

The Department of Physics and Electrical Engineering (PEE) offers a number of programmes based within

the Electrical Engineering discipline. The provision extends from a widening participation foundation year, an IET accredited BEng/MEng through to MSc and research programmes. Several engineering programmes are also franchised to partners in China, Malaysia and Singapore, in both full franchise models and 2+2/3+1 modes. The programme portfolio in this Department has been augmented with the introduction of programmes in Physics and Physics with Astrophysics.

Academic communities are housed in Ellison, Pandon and Wynne Jones buildings. The main student reception area can be found on the second floor of Ellison Building with professional support being provided in Pandon and Ellison. Students' hub areas are available in all buildings, the latest being "The Zone" which has 24-hour access. "The Zone" has received excellent feedback from student representatives.

The Faculty has a wide range of specialist laboratory facilities to support the provision in the disciplines under review, including specialist laboratories for Microscopy and Photovoltaics, New and Renewable Energy, and Agilent Microwave Holography. The Faculty has also made significant capital investment in the laboratories to support the new provision of civil engineering and physics. Mathematics and statistics research staff and students have access to a dedicated Mathematical Modelling lab, a computer lab on the first floor of Pandon with software and hardware appropriate to mathematical research. Regular and significant investment in new equipment and software is made to ensure students are equipped with knowledge and skills reflecting the latest industry developments. An example of this investment is the upgrading of the original ELVIS® (Educational Laboratory Virtual Instrument Suit) unit.

The three Departments of MIS, MCE and PEE total 114 academic staff members. Numbers of students covered by the review were as follows (see Mangement Information Data for further breakdown):

Undergraduate: Home/EU 1133 and International 691 Postgraduate: Home/EU 109 and International 58

The size and scope of the combined disciplines being reviewed required a sampling approach to be adopted. The programmes included in the sample, as agreed by the PR chair, can be found on the Discipline Information Template (attached).

The panel noted the evident enthusiasm, commitment and passion of the staff for their subject areas, supported by students and echoed by employers.

Section 2

Curricula and Standards

The Panel identified the following strengths:

- The volume and scope of successful PSRB accreditation.
- Consistent evidence from external examiner reports that academic standards are being exceeded, including: problem based assessment; student creativity; variety of assessment styles; strong industrial links; commitment and professionalism of staff; and efficiency of examination board processes.
- Evidence of strong industrial links, demonstrated by the continued support for placements and involvement of external stakeholders across the programmes and in specific modules.
- Placement opportunities provided across the programmes linking to increased employability and student satisfaction and confidence.

The Panel made the following recommendations for further development:

- Whilst placements are an evident strength, the uptake is relatively low. The provision is therefore asked to further explore approaches to promoting and increasing participation, communicating the evident advantages of placement to the student body.
- Review processes to ensure currency of the programme specifications and visibility/tracking of the evolution/development of the programme.
- Further develop approval processes to ensure mapping of module learning outcomes to programme learning outcomes, the assurance of alignment to national level descriptors and use of appropriate language to express 'levelness'.
- In relation to foundation years/extended degrees:
 - The Faculty seeks clarification from the University about future provision of this type of activity;
 - >The Faculty reviews foundation years and the students experience and performance on

subsequent extended degrees to evidence the effectiveness of this provision:

The University provides clarification about how foundation year/extended degrees are approved, documented, coded and quality assured.

Section 3 Management Information Trends

The Panel identified the following strengths:

- Awareness of the data trends and evident willingness to take action where appropriate.
- Outstanding NSS scores in some areas of the provision, e.g. 100% satisfaction for BSc (Hons) Mathematics and BSc (Hons) Mathematics with Business.

The Panel made the following recommendations for further development:

Keep under review the trends in the proportion of good degrees across the provision.

Section 4 Student Experience

The Panel identified the following strengths:

- Knowledge, expertise, passion, enthusiasm and approachability of the staff.
- The value of placement opportunities and industrial links in fostering students' personal and professional development, and enhancing their employability.
- Opportunities offered to form social/support networks through extended induction activities.
- Ongoing commitment to improving the student experience through the development of the learning environment, e.g. 'the Zone' and dedicated laboratory space.
- Commitment to providing accessible student support and guidance facilities.

The Panel made the following recommendations for further development:

- Continue to develop systems to monitor and ensure prompt assessment return and consistent high quality formal feedback.
- Review the student experience within some of the modules on the BSc (Hons) Electrical and Electronic Engineering, with specific regard to delivery and assessment practices; ensuring that assessment task/s are clearly mapped to module learning outcomes, appropriately sequenced with delivery schedule, clearly and unequivocally communicated to students.
- Consider methods to improve communication to students on action taken in response to issues they raise.

Section 5 Enhancement Strategies

The Panel identified the following strengths:

• Innovative practice in teaching, learning and assessment across all areas of the provision.

The Panel made the following recommendations for further development:

- Continue to develop processes to encourage and support academic staff seeking HEA fellowships.
- Develop a faculty wide minimum e-learning portal standard for use on all module sites, whilst also exploring methods to audit and quality assure consistency of these standards.
- Ensure consistency in the format and content of the module evaluation process and its use in constructing the annual module review/evaluation.

Section 6 Discipline Response to Report

Short summary response by Discipline on follow up action for inclusion in published report:

Curricula and Standards

Whilst placements are an evident strength, the uptake is relatively low. The provision is therefore asked to further explore approaches to promoting and increasing participation, communicating the evident

advantages of placement to the student body.

A Faculty based placement support team has been established with dedicated professional support.

Review processes to ensure currency of the programme specifications and visibility/tracking of the evolution/development of the programme.

Developing regular reviews and updates, supported by a centralised filing system (awaiting further University developments)

Further develop approval processes to ensure mapping of module learning outcomes to programme learning outcomes, the assurance of alignment to national level descriptors and use of appropriate language to express 'levelness'.

Ongoing revision and publication of Faculty Guidance, supported by Faculty Programme Approvals and Review Sub-Committee throughout this academic year.

In relation to foundation years/extended degrees:

- The Faculty seeks clarification from the University about future provision of this type of activity;
- The Faculty reviews foundation years and the students experience and performance on subsequent extended degrees to evidence the effectiveness of this provision;
- The University provides clarification about how foundation year/extended degrees are approved, documented, coded and quality assured.

Three foundation years in relevant disciplines have been set up that enhance consistency and quality of learning experience of the disciplines across the Faculty.

Management Information Trends

Keep under review the trends in the proportion of good degrees across the provision.

Ongoing review of good degree performance resulting from Programme Evaluation Document process across the Faculty.

Student Experience

Continue to develop systems to monitor and ensure prompt assessment return and consistent high quality formal feedback.

Comprehensive assessment schedules for programmes and levels have been developed which clearly indicates all dates (hand-out, submission and feedback) for all assessments.

Review the student experience within some of the modules on the BSc (Hons) Electrical and Electronic Engineering, with specific regard to delivery and assessment practices; ensuring that assessment task/s are clearly mapped to module learning outcomes, appropriately sequenced with delivery schedule, clearly and unequivocally communicated to students.

Ongoing review of modules and related assessment tasks.

Consider methods to improve communication to students on action taken in response to issues they raise. Implementation of the new Governance framework is currently ongoing. Student feedback is also being gathered and acted upon using a variety of electronic means.

Enhancement Strategies

Continue to develop processes to encourage and support academic staff seeking HEA fellowships. The University wide action plan for achieving this target will be fully implemented at faculty level.

Develop a faculty wide minimum e-learning portal standard for use on all module sites, whilst also exploring methods to audit and quality assure consistency of these standards.

University-wide E-learning portal standards published.

Ensure consistency in the format and content of the module evaluation process and its use in constructing the annual module review/evaluation.

Faculty guidance has been updated and circulated. Completion monitoring is now under way.

Faculty	culty Engineering and Environment Discipline						ematics, Information anagement	Date of Review	5 and 6 March 2014		
Please g	ive information for all pro	grammes include	d in the [Discip	line ¹						
Award	Programme Title			me	Stu	udent N	os ³	n of ry ⁴			_
Title ²	(sample programmes in bold, italics and shaded)	е	Programme Length	FT	SW	PT	Location of Delivery ⁴	Collaborative ⁵	PSRB ⁶	Comment ⁷	
MSc	Electrical Power Engineering	14FELE-N-EPE	6BN		10			NU		Institute of Engineering and Technology (IET)	September intake 12 months duration
MSc	Electrical Power Engineering	14FELN-N-EPE	6BN		2			NU			September intake 16 months duration
MSc	Electrical Power Engineering	14FELN-N-EPE	6FN		9			NU			January intake
MSc	Microelectronic And Communications Engineering	14FELE-N-MIC6	SBN		4			NU			September intake 12 months duration
MSc	Microelectronic And Communications Engineering	14FELN-N-MIC6	6BN		1			NU			September intake 16 months duration
MSc	Microelectronic And Communications Engineering	14FELN-N-MIC6	6FN		10			NU			January intake

¹ Include any that have been recently approved.

² E.g. BA, PG Dip, MSc.

³ Expected at review date.

⁴ Northumbria (NU), other UK (UK), overseas (OS), distance learning (DL).

⁵ If collaborative, specify partner institution and indicate if award is franchised (FR), validated (VA) or dual (DU).

⁶ If any PSRB accreditation/approval (or if applied for), give details.

⁷ Use for any additional contextual information, eg last intake 2011/12; new programme, first intake 2011/12 etc. Page 5 of 12

Award	Programme Title		me	Stu	udent N	os ⁹	n of 'y ¹⁰			
Title ⁸	(sample programmes in bold, italics and shaded)	SITS Code	Programme Length	FT	SW	PT	Location of Delivery ¹⁰	Collaborative ¹¹	PSRB ¹²	Comment ¹³
MSc	Engineering Management	14FENG-N-ENM6BN		3			NU			September intake 12 months duration
MSc	Engineering Management	14FENN-N-ENM6FN		9			NU			January intake
MSc	Mechanical Engineering	14FENG-N-MEE6BN		5			NU		IMEche accreditation	September intake 12 months duration
MSc	Mechanical Engineering	14FENN-N-MEE6FN		12			NU		IMEche accreditation	January intake
MSc	Professional Engineering	14PENG-N-PEN6BN				5	NU			September intake
MSc	Professional Engineering	14PENG-N-PEN6FN				7	NU			January intake
MSc	Information And Library Management	14PICM-N-ILM6BD				3	DL			
MSc	Records Management	14PICM-N-RCM6BD				3	DL			
MSc	Information And Records Management	14PIRM-N-IRM6FD				10	DL		Archives & Records Association (ARA) & Chartered Institute of Library & Information Professionals (CILIP)	
MSc	Information And Library Management	14PLIN-N-LIB6FD				30	DL			Distance Learning. Awarded at October board, next intake start in January

⁸ E.g. BA, PG Dip, MSc.

⁹ Expected at review date.

¹⁰ Northumbria (NU), other UK (UK), overseas (OS), distance learning (DL).

¹¹ If collaborative, specify partner institution and indicate if award is franchised (FR), validated (VA) or dual (DU).

¹² If any PSRB accreditation/approval (or if applied for), give details.
13 Use for any additional contextual information, eg last intake 2011/12; new programme, first intake 2011/12 etc.
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Award	Programme Title		me	Stu	dent No	os ¹⁵	n of y ¹⁶		PSRB ¹⁸	
Title ¹⁴	(sample programmes in bold, italics and shaded)	SITS Code	Programme Length	FT	SW	PT	Location of Delivery ¹⁶	Collaborative ¹⁷		Comment ¹⁹
PG Diploma	Information And Records Management	15PIRM-N-IFR6BD				19	DL			
PG Diploma	Information And Library Management	15PLIN-N-LIM6BD				50	DL			
BEng (Hons)	Electronic Design Engineering	21FEDC-N-EDE1BN		5			NU			
Beng (Hons)	Communication And Electronic Engineering	21FENG-M-CEE1FG		15			os	KDU PJ (FR)		January intake. Phasing out
Beng (Hons)	Electrical And Electronic Engineering	21FENG-M-EEE1BG		36			os	KDU PJ (FR)		September intake. Phasing out
Beng (Hons)	Electrical And Electronic Engineering	21FENG-M-EEE1BP		55			os	KDU Penang (FR)		September intake
Beng (Hons)	Electrical And Electronic Engineering	21FENG-M-EEE1FP		35			os	KDU Penang (FR)		January intake.
Beng (Hons)	Electrical And Electronic Engineering	21FENG-M-EEE1FG		60			os	KDU PJ (FR)		January intake. Phasing out
Beng (Hons)	Electrical And Electronic Engineering	21FENG-M-EEE1KG		2			os	KDU PJ (FR)		June intake. Phasing out

E.g. BA, PG Dip, MSc.Expected at review date.

¹⁶ Northumbria (NU), other UK (UK), overseas (OS), distance learning (DL). ¹⁷ If collaborative, specify partner institution and indicate if award is franchised (FR), validated (VA) or dual (DU).

 ¹⁸ If any PSRB accreditation/approval (or if applied for), give details.
 19 Use for any additional contextual information, eg last intake 2011/12; new programme, first intake 2011/12 etc.
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Award	Programme Title		me	Stu	dent No	os ²¹	n of 'y ²²			
Title ²⁰	(sample programmes in bold, italics and shaded)	SITS Code	Programme ength	FT	SW	PT	Location of Delivery ²²	Collaborative ²³	PSRB ²⁴	Comment ²⁵
Beng (Hons)	Electrical And Electronic Engineering	21FENG-M-EEE1KP		51			os	KDU Penang (FR)		June intake
Beng (Hons)	Manufacturing Systems And Design Engineering	21FENG-O-MST1HK		163			os	Seoultech (VA)		March intake
BSc (Hons)	Communications And Public Relations	21FICM-M-CMR1BP		29			OS	KDU Penang (FR)		September intake
BSc (Hons)	Communications And Public Relations	21FICM-M-CMR1FP		22			OS	KDU Penang (FR)		January intake
BSc (Hons)	Librarianship	21FICM-N-LIB1BD		12			DL			September intake
Beng (Hons)	Mechanical Design Engineering	21FMDC-N-MED1BN		26			NU			September intake
BEng (Hons)	Electrical And Electronic Engineering	21PENC-S-ETC1—FI				7	os	Informatics, Singapore (FR)		January intake. Phased out
MEng (Hons)	Electrical And Electronic Engineering	21PELG-N-ELG1BN				3	NU		Institute of Engineering and Technology (IET)	September intake
BEng (Hons)	Electrical And Electronic Engineering	21PENC-S-ETC1JI				1	os	Informatics, Singapore (FR)		May intake

²⁰ E.g. BA, PG Dip, MSc.

²¹ Expected at review date.

Northumbria (NU), other UK (UK), overseas (OS), distance learning (DL).

If collaborative, specify partner institution and indicate if award is franchised (FR), validated (VA) or dual (DU).

 ²⁴ If any PSRB accreditation/approval (or if applied for), give details.
 ²⁵ Use for any additional contextual information, eg last intake 2011/12; new programme, first intake 2011/12 etc.

Award	Programme Title		me	Stu	dent No	os ²⁷	n of 'y ²⁸			
Title ²⁶	(sample programmes in bold, italics and shaded)	SITS Code	Programme Length	FT	SW	PT	Location of Delivery ²⁸	Collaborative ²⁹	PSRB ³⁰	Comment ³¹
BEng (Hons)	Electrical And Electronic Engineering	21PEND-M-EEE1BP				9	os	KDU Penang (FR)		September intake
BEng (Hons)	Electrical And Electronic Engineering	21PEND-M-EEE1FP				4	os	KDU Penang (FR)		January intake
BEng (Hons)	Electrical And Electronic Engineering	21PEND-M-EEE1KP				10	os	KDU Penang (FR)		June intake
BEng (Hons)	Electrical And Electronic Engineering	21PEND-N-EEE1—BN				12	NU		Engineering and	September intake. Phasing out
BEng (Hons)	Mechanical Engineering	21PENG-N-MEE1BN				68	NU		Institution of Mechanical Engineers (IMechE)	September intake
BSc (Hons)	Information And Library Management	21PICM-N-IML1BN				1	NU			September intake
MEng (Hons)	Mechanical Engineering	21PMCG-N-MCG1BN				1	NU		Institute of Engineering & Technology (IET), IMEche Accreditation awaited	September intake
BSc (Hons)	Information And Web Management	21PICM-N-IWM1BN				1	NU			September intake

²⁶ E.g. BA, PG Dip, MSc.

²⁷ Expected at review date.

²⁸ Northumbria (NU), other UK (UK), overseas (OS), distance learning (DL).
²⁹ If collaborative, specify partner institution and indicate if award is franchised (FR), validated (VA) or dual (DU).

 ³⁰ If any PSRB accreditation/approval (or if applied for), give details.
 31 Use for any additional contextual information, eg last intake 2011/12; new programme, first intake 2011/12 etc. Page 9 of 12

Award	Programme Title	SITS Code	me	Stu	dent No	os ³³	n of ry ³⁴	Collaborative ³⁵		
Title ³²	(sample programmes in bold, italics and shaded)		Programme Length	FT	SW	PT	Location of Delivery ³⁴		PSRB ³⁶	Comment ³⁷
	IT Management For Business	BSc (Hons) Information Technology for Business (Seoul-Tech, Korea)				89				
-	Electrical And Electronic Engineering	21SELE-N-EEE1BN			229		NU		Institute of Engineering and Technology (IET)	September intake
MEng (Hons)	Electrical And Electronic Engineering	21SELG-N-ELG1BN			4		NU			September intake
BSc (Hons)	Engineering Management	21SENG-N-ENG1BN			16		NU			Phasing out
BEng (Hons)	Mechanical Engineering	21SENG-N-MEE1BN			323		NU		Institution of Mechanical Engineers (IMechE)	September intake
BSc (Hons)	Product Design Technology	21SENG-N-PDT1BN			85		NU			September intake
BSc (Hons)	Communications And Public Relations	21SICM-N-CPR1BN			135		NU		Chartered Institute of Public Relations (CIPR)	September intake
BSc (Hons)	Information And Web Management	21SICM-N-IWM1BN			1		NU			September intake
BSc (Hons)	Information And Library Management	21SICM-N-IML1BN			3		NU			September intake

³² E.g. BA, PG Dip, MSc.

³³ Expected at review date.

Northumbria (NU), other UK (UK), overseas (OS), distance learning (DL).

The collaborative, specify partner institution and indicate if award is franchised (FR), validated (VA) or dual (DU).

 ³⁶ If any PSRB accreditation/approval (or if applied for), give details.
 37 Use for any additional contextual information, eg last intake 2011/12; new programme, first intake 2011/12 etc. Page 10 of 12

Award	Programme Title	SITS Code E	me	Stu	dent No	os ³⁹	n of ry ⁴⁰			
Title ³⁸	(sample programmes in bold, italics and shaded)		Locatio	Collaborative ⁴¹	PSRB ⁴²	Comment ⁴³				
BSc (Hons)	Mathematics	21SMAS-N-MAT1BN			234		NU			September intake
BSc (Hons)	Mathematics With Business Management	21SMAS-N-MAT3BMN BN			49		NU			September intake
•	Mechanical Engineering	21SMCG-N-MCG1BN			58		NU		Institute of Engineering & Technology (IET), IMEche Accreditation	September intake
BEng	Marine Engineering (Ordinary Degree)	22FMEN-U-MEG1FS		18			UK	South Tyneside (VA)		January intake
BSc (Hons)	Librarianship	22PCOM-N-LIB1BD				18	DL			September intake
BSc (Hons)	Librarianship	22PINF-N-LIB1BD				10	DL			September intake
Foundati on	Product Design Technology	23FEDT-N-PDT5BN		12			NU			September intake
	Mechanical Engineering	23FENG-N-MEE5BN		46			NU			September intake
Foundati on	Electrical And Electronic Engineering-	23FELE-N-EEE5BN		24			NU			September intake

³⁸ E.g. BA, PG Dip, MSc.

³⁹ Expected at review date.

An Northumbria (NU), other UK (UK), overseas (OS), distance learning (DL).

All If collaborative, specify partner institution and indicate if award is franchised (FR), validated (VA) or dual (DU).

⁴² If any PSRB accreditation/approval (or if applied for), give details.

⁴³ Use for any additional contextual information, eg last intake 2011/12; new programme, first intake 2011/12 etc.

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Award	Programme Title	SITS Code	Programme Length	Stu	dent No	os ⁴⁵	n of 3y46	Collaborative ⁴⁷	PSRB ⁴⁸	
Title ⁴⁴	(sample programmes in bold, italics and shaded)			FT	SW	PT	Location Delivery ⁴			Comment ⁴⁹
Foundati	Electrical And Electronic Marine Engineering	23FENG-U-EME5BS		97			UK	South Tyneside (VA)		September intake
Foundati on		23FENG-U-MEN5BS		96			UK	South Tyneside (VA)		September intake
	Information And Communication Technologies	23FICM-N-ICT5BN		16			NU			September intake
	Information Technology Management	23FSDE-N-ITM5BN		51			NU			September intake
Credits	Engineering	35FCEI-N-ENG4BN		13			NU			Erasmus coding
Credits	Engineering	38FCEI-N-ENG8BN		56			NU			Credits

44 E.g. BA, PG Dip, MSc.45 Expected at review date.

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⁴⁷ If collaborative, specify partner institution and indicate if award is franchised (FR), validated (VA) or dual (DU).
⁴⁸ If any PSRB accreditation/approval (or if applied for), give details.
⁴⁹ Use for any additional contextual information, eg last intake 2011/12; new programme, first intake 2011/12 etc.

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