Country	Operator	Type of measure*	Description of the measure	Objective	Method of implementation (if applicable)	Number of subscribers having a subscription where this measure is implemented	How is the user informed?	Can the user activate/deactivate the measure? How?	Protection of business secret
				ISP only	ISP only	ISP only			
		User's access is blocked/throttled, e.g. after having downloaded/uploaded a certain amount of data.	[redacted]						
		If you offer specialized services (e. g. facilities-based telephony and television over broadband as opposed to "over the top" applications), how does this affect the Internet access traffic on the same access							
		Different priority levels within Internet access traffic	*Examples of measures that depend on the type of protocol or application (mail, video, web, etc.) accessed via Internet.*						
			P2P file sharing is blocked/throttled						
			VoIP is blocked/throttled						
			Other specific kind of traffic (port, protocol, application, usage, etc) is blocked/throttled						
			Specific application/content provider (e.g. website or VoIP provider) is blocked/throttled						
			Specific type of over-the-top traffic given preferential treatment (e.g. specific content/application and/or specific application/content provider)						
		Restriction on the type of terminal allowed, or tiered pricing depending on the terminal used							
		Other relevant practice	To be completed with other types of measures - *add as many lines as extra practices*						
		* If several effective measures fall in the same category, add one line per measure	***Expected answer:*** *Description of the measure, in terms of impact for the users*	*Reason(s) for the implementation of the measure (e.g. congestion management, network security, law enforcement, commercial terms)*	*How the measure is implemented (technically) and, if applicable, which conditions trigger it (e.g. threshold of data consumption). If the measure is not technically enforced, state: "N/A".*	*Number of subscribers to the packages where this measure is implemented*	*Description of the relevant contractual terms, plus any other type of information given to the user.*	*Yes "or "No" If Yes, specify how, technically (which actions have to be taken by the user) and commercially (free/paying option)*	*If some information in a specific row is considered confidential, please mention precisely which parts should not be individually disclosed, and why. Reminder: in any case, all information is subject to publication, at least in a form that will be anonymous (generally aggregate).*

Country	Operator	ISP only **Total number of subscribers to packages that include a fixed access to the Internet (mobile: see other tab)**
		[redacted]

[redacted]

Country	Operator	Open questions regarding traffic management	Response
		What kind of application-agnostic traffic management techniques is used for e.g. congestion manageme	[redacted]
		What technologies (e.g. DPI) are used in the network to differentiate between packets?	
		Where are these techniques implemented in the network? (e.g. close to interconnection points)	
		Are there some plans for implementing additional traffic management practices in the future?	

Country	Additional open questions	
	Any additional comment	[redacted]
		Comments on any other conditions that may impact users' ability to access the content/application of their choice

Country	Operator	Type of measure*		Description of the measure	Objective	Method of implementation (if applicable)	Number of subscribers having a subscription where this measure is implemented	How is the user informed?	Can the user activate/deactivate the measure? How?	Protection of business secret
						ISP only	ISP only	ISP only		
Germany	1&1	User's access is blocked/throttled, e.g. after having downloaded/uploaded a certain amount of data.		[redacted]						
		If you offer specialized services, how does this affect the Internet access traffic on the same access								
		Different priority levels within Internet access traffic	*Examples of measures that depend on the type of protocol or application (mail, video, web, etc.) accessed via Internet:*							
			P2P file sharing is blocked/throttled							
			VoIP is blocked/throttled							
			Instant Messaging services are blocked/throttled							
			Other specific kind of traffic (port, protocol, application, usage, etc) is blocked/throttled							
			Specific application/content provider (e.g. website or VoIP provider) is blocked/throttled							
			Specific type of over-the-top traffic given preferential treatment (e.g. specific content/application and/or specific application/content provider)							
		Restriction on the type of terminal allowed, or tiered pricing depending on the terminal used								
		Other relevant practice	To be completed with other types of measures - *add as many lines as extra practices*							
		Expected answer:		*Description of the measure, in terms of impact for the users*	*Reason(s) for the implementation of the measure (e.g. congestion management, network security, law enforcement, commercial terms)*	*How the measure is implemented (technically) and, if applicable, which conditions trigger it (e.g. threshold of data consumption). If the measure is not technically enforced, state: "N/A".*	*Number of subscribers to the packages where this measure is implemented*	*Description of the relevant contractual terms, plus any other type of information given to the user.*	*Yes or No* *If Yes, specify how, technically (which actions have to be taken by the user) and commercially (free/paying option).*	*If some information in a specific row is considered confidential, please mention precisely which parts should not be individually disclosed, and why. Reminder: in any case, all information is subject to publication, at least in a form that will be anonymous (generally aggregate).*

* If several effective measures fall in the same category, add one line per measure

Country	Operator	ISP only **Total number of subscribers to packages that include a mobile access to the Internet (fixed: see other tab)**
		[redacted]

Country	Operator	Open questions regarding traffic management	Response
		What kind of application-agnostic traffic management techniques is used for e.g. congestion management?	[redacted]
		What technologies (e.g. DPI) are used in the network to differentiate between packets?	
		Where are these techniques implemented in the network? (e.g. close to interconnection points)	
		Are there some plans for implementing additional traffic management practices in the future?	

Country	Additional open questions	
	Any additional comment	[redacted]
	Comments on any other conditions that may impact users' ability to access the content/application of their choice	

Country	Operator	Type of measure*		Description of the measure	ISP only Objective	ISP only Method of implementation (if applicable)	ISP only Number of subscribers having a subscription where this measure is implemented	How is the user informed?	Can the user activate/deactivate the measure? How?	Protection of business secret
		User's access is blocked/throttled, e.g. after having downloaded/uploaded a certain amount of data.								
		If you offer specialized services (e. g. facilities-based telephony and television over broadband as opposed to "over the top" applications), how does this affect the Internet access traffic on the same access								
		Different priority levels within Internet access traffic	*Examples of measures that depend on the type of protocol or application (mail, video, web, etc.) accessed via internet:*							
			P2P file sharing is blocked/throttled							
			VoIP is blocked/throttled							
			Other specific kind of traffic (port, protocol, application, usage, etc) is blocked/throttled							
			Specific application/content provider (e.g. website or VoIP provider) is blocked/throttled							
			Specific type of over-the-top traffic given preferential treatment (e.g. specific content/application and/or specific application/content provider)							
		Restriction on the type of terminal allowed, or tiered pricing depending on the terminal used								
		Other relevant practice	To be completed with other types of measures - *add as many lines as extra practices*							
		* If several effective measures fall in the same category, add one line per measure		***Expected answer:*** *Description of the measure, in terms of impact for the users*	*Reason(s) for the implementation of the measure (e.g. congestion management, network security, law enforcement, commercial terms)*	*How the measure is implemented (technically) and, if applicable, which conditions trigger it (e.g. threshold of data consumption). If the measure is not technically enforced, state: "N/A".*	*Number of subscribers to the packages where this measure is implemented*	*Quotation of the relevant contractual terms, plus any other type of information given to the user.*	*Yes' or 'No' If Yes, specify how, technically (which actions have to be taken by the user) and commercially (free/paying option).*	*If some information in a specific row is considered confidential, please mention precisely which parts should not be individually disclosed, and why. Reminder: in any case, all information is subject to publication, at least in a form that will be anonymous (generally aggregate).*

Country	Operator	ISP only Total number of subscribers to packages that include a fixed access to the Internet (mobile: see other tab)

Country	Operator	Open questions regarding traffic management	Response
		What kind of application-agnostic traffic management techniques is used for e.g. congestion management?	
		What technologies (e.g. DPI) are used in the network to differentiate between packets?	
		Where are these techniques implemented in the network? (e.g. close to interconnection points)	
		Are there some plans for implementing additional traffic management practices in the future?	

Country	Additional open questions	
	Any additional comment	
		Comments on any other conditions that may impact users' ability to access the content/application of their choice

Country	Operator	Type of measure*		Description of the measure	ISP only Objective	ISP only Method of implementation (if applicable)	ISP only Number of subscribers having a subscription where this measure is implemented	How is the user informed?	Can the user activate/deactivate the measure? How?	Protection of business secret
D	E-Plus **	User's access is blocked/throttled, e.g. after having downloaded/uploaded a certain amount of data.		Throttling to GPRS speed after having consumed the amout of data specified in the tarif	It is part of the tarif structure that the user can choose between different data volumes.	When the amount of data specified in the tarif has been consumed, speed will be throtteled to GPRS speed. The consumed amount of data is measured at the GI interface.	This measure is implemented for all users with a data tariff with volume limit.	The throtting after having consumed the specified amount of data is part of the contract with the customer. The customer is transparently informed about that in the contract. Moreover, in some tarifs an SMS is send if 80% of the data volume has been consumed (if the customer opted in for recieving such messages).	No	No
D	E-Plus	If you offer specialized services, how does this affect the Internet access traffic on the same access								
D	E-Plus	Different priority levels within Internet access traffic	*Examples of measures that depend on the type of protocol or application (mail, video, web, etc.) accessed via Internet:*							
D	E-Plus		P2P file sharing is blocked/throttled	*Our contract conditions reserve the right to limit the use of P2P file sharing but there have been no active measures so far*	*Network security*	*No active measures*	N/A	N/A	N/A	No
D	E-Plus		VoIP is blocked/throttled	*VoIP use is excluded by the contract conditions but there are no technical or legal measures to prevent this*	*No active measures*	*No active measures*	N/A	N/A	N/A	No
D	E-Plus		Instant Messaging services are blocked/throttled	*No*	*N/A*	*N/A*	N/A	N/A	N/A	No
D	E-Plus		Other specific kind of traffic (port, protocol, application, usage, etc) is blocked/throttled	*No*	*N/A*	*N/A*	N/A	N/A	N/A	No
D	E-Plus		Specific application/content provider (e.g. website or VoIP provider) is blocked/throttled	*No*	*N/A*	*N/A*	N/A	N/A	N/A	No
D	E-Plus		Specific type of over-the-top traffic given preferential treatment (e.g. specific content/application and/or specific application/content provider)	*No*	*N/A*	*N/A*	N/A	N/A	N/A	No
D	E-Plus	Restriction on the type of terminal allowed, or tiered pricing depending on the terminal used		*No*	*N/A*	*N/A*	N/A	N/A	N/A	No
D	E-Plus	Other relevant practice	*To be completed with other types of measures - add as many lines as extra practices*	*N/A*	*N/A*	*N/A*	N/A	N/A	N/A	No
		* If several effective measures fall in the same category, add one line per measure		***Expected answer:*** *Description of the measure, in terms of impact for the users*	*Reason(s) for the implementation of the measure (e.g. congestion management, network security, law enforcement, commercial terms)*	*How the measure is implemented (technically) and, if applicable, which conditions trigger it (e.g. threshold of data consumption). If the measure is not technically enforced, state: "N/A".*	*Number of subscribers to the packages where this measure is implemented*	*Quotation of the relevant contractual terms, plus any other type of information given to the user.*	*Yes' or 'No' If Yes, specify how, technically (which actions have to be taken by the user) and commercially (free/paying option).*	*If some information in a specific row is considered confidential, please mention precisely which parts should not be individually disclosed, and why. Reminder: in any case, all information is subject to publication, at least in a form that will be anonymous (generally aggregate).*

Country	Operator	ISP only Total number of subscribers to packages that include a mobile access to the Internet (fixed: see other tab)
D	E-Plus	E-Plus Gruppe has 22,1 million customers. Given they have applicable hardware, all of them have access to the Internet

Country	Operator	Open questions regarding traffic management	Response
D	E-Plus	What kind of application-agnostic traffic management techniques is used for e.g. congestion management?	PCRF (policy control rule function)
D	E-Plus	What technologies (e.g. DPI) are used in the network to differentiate between packets?	None
D	E-Plus	Where are these techniques implemented in the network? (e.g. close to interconnection points)	N/A
D	E-Plus	Are there some plans for implementing additional traffic management practices in the future?	No concrete plans

** Answers apply for all direct customers - without independent Service Providers

Country	Additional open questions	
	Any additional comment	*Comments on any other conditions that may impact users' ability to access the content/application of their choice*

Country	Operator	Type of measure*		Description of the measure	ISP only Objective	ISP only Method of implementation (if applicable)	ISP only Number of subscribers having a subscription where this measure is implemented	How is the user informed?	Can the user activate/deactivate the measure? How?	Protection of business secret
Germany	EWE TEL	User's access is blocked/throttled, e.g. after having downloaded/uploaded a certain amount of data.		none						
Germany	EWE TEL	If you offer specialized services (e. g. facilities-based telephony and television over broadband as opposed to "over the top" applications), how does this affect the Internet access traffic on the same access		Facilities-based ip-telephony is marked with a higher precendence than internet-traffic. In some circumstances, this reduces the available bandwith on the access line off about 100 kbit/s per call (at a maxium of two calls).	To assure the functionality of the telephony-service.	Marking in the Class of Service Field (CoS, 802.1.p) and also on cbr (constant bit Rate) for an ADSL or VDSL NGN connection.	20.000 customers	The user ist expecting this behaviour, otherwise an IP-telephone-call can be interrupted by e.g. an internet download.	No	
Germany	EWE TEL	Different priority levels within Internet access traffic	*Examples of measures that depend on the type of protocol or application (mail, video, web, etc.) accessed via Internet:* P2P file sharing is blocked/throttled	none						
Germany	EWE TEL		VoIP is blocked/throttled	none						
Germany	EWE TEL		Other specific kind of traffic (port, protocol, application, usage, etc) is blocked/throttled	port 25 for downstream traffic blocked in order to avoid mail server usage of the customer.	*To assure that the customer equipment is not missused as a spamm-device etc. to forward mail over Port 25*	*Port 25 can be opened upon customer request.*	440.000 customers	no ex ante information	Activation ist activated on request of user	
Germany	EWE TEL		Specific application/content provider (e.g. website or VoIP provider) is blocked/throttled	none						
Germany	EWE TEL		Specific type of over-the-top traffic given preferential treatment (e.g. specific content/application and/or specific application/content provider)	none						
Germany	EWE TEL	Restriction on the type of terminal allowed, or tiered pricing depending on the terminal used		Type of CPE is fixed in order to ensure realisation of services, esp. for emergency calls	*To assure emergency calls over NGN based customers.*	*Includes all NGN-Based products (ADSL- and VDSL NGN, BK-Networks and FTTH products - System will be signaling calling number of customer*	55.000 customers		Deactivation is not possible	
Germany	EWE TEL	Other relevant practice	To be completed with other types of measures - *add as many lines as extra practices*	none						
		* If several effective measures fall in the same category, add one line per measure		***Expected answer:*** *Description of the measure, in terms of impact for the users*	*Reason(s) for the implementation of the measure (e.g. congestion management, network security, law enforcement, commercial terms)*	*How the measure is implemented (technically) and, if applicable, which conditions trigger it (e.g. threshold of data consumption). If the measure is not technically enforced, state: "N/A".*	*Number of subscribers to the packages where this measure is implemented*	*Quotation of the relevant contractual terms, plus any other type of information given to the user.*	*Yes' or 'No'* *If Yes, specify how, technically (which actions have to be taken by the user) and commercially (free/paying option).*	*If some information in a specific row is considered confidential, please mention precisely which parts should not be individually disclosed, and why. Reminder: in any case, all information is subject to publication, at least in a form that will be anonymous (generally aggregate).*

Country	Operator	ISP only Total number of subscribers to packages that include a fixed access to the Internet (mobile: see other tab)
Germany	EWE TEL	558.000

Country	Operator	Open questions regarding traffic management	Response
Germany	EWE TEL	What kind of application-agnostic traffic management techniques is used for e.g. congestion management?	1. Usage of redundancy-concept and Traffic Engineering. 2. Permanent Monitoring of capacity utilisation. 3. Constantly upgrading the network regarding points 1 and 2.
Germany	EWE TEL	What technologies (e.g. DPI) are used in the network to differentiate between packets?	We are not using Deep-Packet-Inspektion or something else.
Germany	EWE TEL	Where are these techniques implemented in the network? (e.g. close to interconnection points)	not implemented
Germany	EWE TEL	Are there some plans for implementing additional traffic management practices in the future?	No.

Country		Additional open questions	
Germany	EWE TEL	Any additional comment	
			Comments on any other conditions that may impact users' ability to access the content/application of their choice

Country	Operator	Type of measure*	Description of the measure	ISP only Objective	ISP only Method of implementation (if applicable)	ISP only Number of subscribers having a subscription where this measure is implemented	How is the user informed?	Can the user activate/deactivate the measure? How?	Protection of business secret
		User's access is blocked/throttled, e.g. after having downloaded/uploaded a certain amount of data.							
		If you offer specialized services, how does this affect the Internet access traffic on the same access							
		Different priority levels within Internet access traffic	*Examples of measures that depend on the type of protocol or application (mail, video, web, etc.) accessed via internet:* P2P file sharing is blocked/throttled						
			VoIP is blocked/throttled						
			Instant Messaging services are blocked/throttled						
			Other specific kind of traffic (port, protocol, application, usage, etc) is blocked/throttled						
			Specific application/content provider (e.g. website or VoIP provider) is blocked/throttled						
			Specific type of over-the-top traffic given preferential treatment (e.g. specific content/application and/or specific application/content provider)						
		Restriction on the type of terminal allowed, or tiered pricing depending on the terminal used							
		Other relevant practice	To be completed with other types of measures - *add as many lines as extra practices*						
		* If several effective measures fall in the same category, add one line per measure	***Expected answer:*** *Description of the measure, in terms of impact for the users*	*Reason(s) for the implementation of the measure (e.g. congestion management, network security, law enforcement, commercial terms)*	*How the measure is implemented (technically) and, if applicable, which conditions trigger it (e.g. threshold of data consumption). If the measure is not technically enforced, state: "N/A".*	*Number of subscribers to the packages where this measure is implemented*	*Quotation of the relevant contractual terms, plus any other type of information given to the user.*	*Yes' or 'No' If Yes, specify how, technically (which actions have to be taken by the user) and commercially (free/paying option).*	*If some information in a specific row is considered confidential, please mention precisely which parts should not be individually disclosed, and why. Reminder: in any case, all information is subject to publication, at least in a form that will be anonymous (generally aggregate).*

Country	Operator	ISP only **Total number of subscribers to packages that include a mobile access to the Internet (fixed: see other tab)**

Country	Operator	Open questions regarding traffic management	Response
		What kind of application-agnostic traffic management techniques is used for e.g. congestion management?	
		What technologies (e.g. DPI) are used in the network to differentiate between packets?	
		Where are these techniques implemented in the network? (e.g. close to interconnection points)	
		Are there some plans for implementing additional traffic management practices in the future?	

Country	Additional open questions	
	Any additional comment	
		Comments on any other conditions that may impact users' ability to access the content/application of their choice

Country	Operator	Type of measure*		Description of the measure	Objective	Method of implementation (if applicable)	Number of subscribers having a subscription where this measure is implemented	How is the user informed?	Can the user activate/deactivate the measure? How?	Protection of business secret
						ISP only	ISP only	ISP only		
		User's access is blocked/throttled, e.g. after having downloaded/uploaded a certain amount of data.		[redacted]						
		If you offer specialized services (e. g. facilities-based telephony and television over broadband as opposed to "ove the top" applications), how does this affect the Internet access traffic on the same access								
		Different priority levels within Internet access traffic	*Examples of measures that depend on the type of protocol or application (mail, video, web, etc.) accessed via internet:*							
			P2P file sharing is blocked/throttled							
			VoIP is blocked/throttled							
			Other specific kind of traffic (port, protocol, application, usage, etc) is blocked/throttled							
			Specific application/content provider (e.g. website or VoIP provider) is blocked/throttled							
			Specific type of over-the-top traffic given preferential treatment (e.g. specific content/application and/or specific application/content provider)							
		Restriction on the type of terminal allowed, or tiered pricing depending on the terminal used								
		Other relevant practice	To be completed with other types of measures - *add as many lines as extra practices*							
		* If several effective measures fall in the same category, add one line per measure	***Expected answer:***	*Description of the measure, in terms of impact for the users*	*Reason(s) for the implementation of the measure (e.g. congestion management, network security, law enforcement, commercial terms)*	*How the measure is implemented (technically) and, if applicable, which conditions trigger it (e.g. threshold of data consumption). If the measure is not technically enforced, state: "N/A".*	*Number of subscribers to the packages where this measure is implemented*	*Quotation of the relevant contractual terms, plus any other type of information given to the user.*	*Yes or No* *If Yes, specify how, technically (which actions have to be taken by the user) and commercially (free/paying option).*	*If some information in a specific row is considered confidential, please mention precisely which parts should not be individually disclosed, and why. Reminder: in any case, all information is subject to publication, at least in a form that will be anonymous (generally aggregate).*

Country	Operator	Total number of subscribers to packages that include a fixed access to the Internet (mobile: see other tab)
		[redacted]

Country	Operator	Open questions regarding traffic management	Response
		What kind of application-agnostic traffic management techniques is used for e.g. congestion management?	[redacted]
		What technologies (e.g. DPI) are used in the network to differentiate between packets?	
		Where are these techniques implemented in the network? (e.g. close to interconnection points)	
		Are there some plans for implementing additional traffic management practices in the future?	

Country	Additional open questions	
	Any additional comment	*Comments on any other conditions that may impact users' ability to access the content/application of their choice*

Country	Operator	Type of measure*		Description of the measure	Objective (ISP only)	Method of implementation (if applicable) (ISP only)	Number of subscribers having a subscription where this measure is implemented (ISP only)	How is the user informed?	Can the user activate/deactivate the measure? How?	Protection of business secret
Ger	Vodafone, Telekom, E-Plus, Telefonica o2	User's access is blocked/throttled, e.g. after having downloaded/uploaded a certain amount of data.		Access is throttled (Speed Step Down) after reaching a certain data volume per month (depending on the tariff plan 200 MB up to 10 GB) in flatrate	defined by MNO	Implemented by MNO	[redacted]	Tariff plan information (offer/tarif sheet etc) states the measure	Some plans enable the user to buy additional high speed volume e.g. via SMS	[redacted]
/	/	If you offer specialized services, how does this affect the Internet access traffic on the same access		*NA*	*NA*	*NA*				
Ger	Vodafone, Telekom, E-Plus, Telefonica o2	Different priority levels within Internet access traffic	*Examples of measures that depend on the type of protocol or application (mail, video, web, etc.) accessed via Internet:*							
			P2P file sharing is blocked/throttled	P2P usage not allowed (blocked) respectively not included in flatrate	defined by MNO	Implemented by MNO		Tariff plan information (offer/tarif sheet etc) states the measure	no	
			VoIP is blocked/throttled	VoIP usage not allowed (blocked) respectively not included in flatrate	defined by MNO	Implemented by MNO		Tariff plan information (offer/tarif sheet etc) states the measure	no	
			Instant Messaging services are blocked/throttled	IM usage not allowed (blocked) respectively not included in flatrate	defined by MNO	Implemented by MNO		Tariff plan information (offer/tarif sheet etc) states the measure	no	
			Other specific kind of traffic (port, protocol, application, usage, etc) is blocked/throttled	Throttled / blocked traffic types may include VPN, FTP, Business Software	defined by MNO	Implemented by MNO		Tariff plan information (offer/tarif sheet etc) states the measure	no	
			Specific application/content provider (e.g. website or VoIP provider) is blocked/throttled	*NA*	*NA*	*NA*				
			Specific type of over-the-top traffic given preferential treatment (e.g. specific content/application and/or specific application/content provider)	*NA*	*NA*	*NA*				
		Restriction on the type of terminal allowed, or tiered pricing depending on the terminal used		Different type of tariffs for Big Screen (Laptop/Tablet) and Small Screen (Mobile Phones) devices	commercial terms defined by MNO	Implemented by MNO		Tariff plan information (offer/tarif sheet etc) states the measure	no	
		Other relevant practice	To be completed with other types of measures - *add as many lines as extra practices*							
		* If several effective measures fall in the same category, add one line per measure	**Expected answer:**	*Description of the measure, in terms of impact for the users*	*Reason(s) for the implementation of the measure (e.g. congestion management, network security, law enforcement, commercial terms)*	*How the measure is implemented (technically) and, if applicable, which conditions trigger it (e.g. threshold of data consumption). If the measure is not technically enforced, state: "N/A".*	*Number of subscribers to the packages where this measure is implemented*	*Quotation of the relevant contractual terms, plus any other type of information given to the user.*	*Yes' or 'No' If Yes, specify how, technically (which actions have to be taken by the user) and commercially (free/paying option).*	*If some information in a specific row is considered confidential, please mention precisely which parts should not be individually disclosed, and why. Reminder: in any case, all information is subject to publication, at least in a form that will be anonymous (generally aggregate).*

Country	Operator	Total number of subscribers to packages that include a mobile access to the Internet (fixed: see other tab) (ISP only)
		[redacted]

All our mobile services customers (credit) have the possibility to use mobile Internet access on a pay per use basis (GPRS/UMTS by Call charged on time and / or data volume).

[redacted]

[redacted]

Country	Operator	Open questions regarding traffic management	Response
		What kind of application-agnostic traffic management techniques is used for e.g. congestion management?	We have no technical infrastructure. All measures are implemented by the respective MNO
		What technologies (e.g. DPI) are used in the network to differentiate between packets?	We have no technical infrastructure. All measures are implemented by the respective MNO
		Where are these techniques implemented in the network? (e.g. close to interconnection points)	We have no technical infrastructure. All measures are implemented by the respective MNO
		Are there some plans for implementing additional traffic management practices in the future?	We have no technical infrastructure. All measures are implemented by the respective MNO

Country	Additional open questions	
	Any additional comment	All measures are defined and implemented by the network operators. We are not able to influence these measures.
		Comments on any other conditions that may impact users' ability to access the content/application of their choice

Kabel Deutschland

Fixed access

Country	Operator	Type of measure*		Description of the measure	ISP only Objective	ISP only Method of Implementation (if applicable)	ISP only Number of subscribers having a subscription where this measure is implemented	How is the user informed?	Can the user activate/deactivate the measure? How?	Protection of business secret
		User's access is blocked/throttled, e.g. after having downloaded/uploaded a certain amount of data.		[redacted]						
		If you offer specialized services (e. g. facilities-based telephony and television over broadband as opposed to "over the top" applications), how does this affect the Internet access traffic on the same access		Our VoIP based telephony service (stand-alone or bundled) is implemented via PacketCable standard. Internet access traffic and available bandwidth is not affected by voice services.	Ensure voice service quality	Additional bandwidth reserved for voice traffic at access level (DOCSIS service flow)	all phone customers		no	no
		Different priority levels within Internet access traffic	*Examples of measures that depend on the type of protocol or application (mail, video, web, etc.) accessed via Internet:*	no						
			P2P file sharing is blocked/throttled	no						
			VoIP is blocked/throttled	no						
			Other specific kind of traffic (port, protocol, application, usage, etc) is blocked/throttled	no						
			Specific application/content provider (e.g. website or VoIP provider) is blocked/throttled	no						
			Specific type of over-the-top traffic given preferential treatment (e.g. specific content/application and/or specific application/content provider)	no						
		Restriction on the type of terminal allowed, or tiered pricing depending on the terminal used		no						
		Other relevant practice	To be completed with other types of measures - *add as many lines as extra practices*	no						

* If several effective measures fall in the same category, add one line per measure

Expected answer: *Description of the measure, in terms of impact for the users*

Reason(s) for the implementation of the measure (e.g. congestion management, network security, law enforcement, commercial terms)

How the measure is implemented (technically) and, if applicable, which conditions trigger it (e.g. threshold of data consumption). If the measure is not technically enforced, state: "N/A".

Number of subscribers to the packages where this measure is implemented

Quotation of the relevant contractual terms, plus any other type of information given to the user.

'Yes' or 'No'
If Yes, specify how, technically (which actions have to be taken by the user) and commercially (free/paying option).

If some information in a specific row is considered confidential, please mention precisely which parts should not be individually disclosed, and why. Reminder: in any case, all information is subject to publication, at least in a form that will be anonymous (generally aggregate).

ISP only

Country	Operator	Total number of subscribers to packages that include a fixed access to the Internet (mobile: see other tab)
		[redacted]

Country	Operator	Open questions regarding traffic management	Response
		What kind of application-agnostic traffic management techniques is used for e.g. congestion management?	[redacted]
		What technologies (e.g. DPI) are used in the network to differentiate between packets?	
		Where are these techniques implemented in the network? (e.g. close to interconnection points)	
		Are there some plans for implementing additional traffic management practices in the future?	

Country	Additional open questions	
	Any additional comment	*Comments on any other conditions that may impact users' ability to access the content/application of their choice*

Country	Operator	Type of measure*	Description of the measure	Objective	ISP only Method of implementation (if applicable)	ISP only Number of subscribers having a subscription where this measure is implemented	ISP only How is the user informed?	Can the user activate/deactivate the measure? How?	Protection of business secret
		User's access is blocked/throttled, e.g. after having downloaded/uploaded a certain amount of data.	Mobile data speed is limited for a certain period (rest of day/month) to 64 Kbit/s for up- and download if certain data volume (e.g. 300 MB, 1GB, 5GB) is exceeded				Information in advertisement as well as in terms & conditions of contract	no	no
		If you offer specialized services, how does this affect the Internet access traffic on the same access							
		Different priority levels within Internet access traffic	*Examples of measures that depend on the type of protocol or application (mail, video, web, etc.) accessed via Internet:* P2P file sharing is blocked/throttled						
			VoIP is blocked/throttled						
			Instant Messaging services are blocked/throttled						
			Other specific kind of traffic (port, protocol, application, usage, etc) is blocked/throttled						
			Specific application/content provider (e.g. website or VoIP provider) is blocked/throttled						
			Specific type of over-the-top traffic given preferential treatment (e.g. specific content/application and/or specific application/content provider)						
		Restriction on the type of terminal allowed, or tiered pricing depending on the terminal used	no						
		Other relevant practice	To be completed with other types of measures - *add as many lines as extra practices*						
		* If several effective measures fall in the same category, add one line per measure	***Expected answer:*** *Description of the measure, in terms of impact for the users*	*Reason(s) for the implementation of the measure (e.g. congestion management, network security, law enforcement, commercial terms)*	*How the measure is implemented (technically) and, if applicable, which conditions trigger it (e.g. threshold of data consumption). If the measure is not technically enforced, state: "N/A".*	*Number of subscribers to the packages where this measure is implemented*	*Quotation of the relevant contractual terms, plus any other type of information given to the user.*	*Yes or No* *If Yes, specify how, technically (which actions have to be taken by the user) and commercially (free/paying option).*	*If some information in a specific row is considered confidential, please mention precisely which parts should not be individually disclosed, and why. Reminder: in any case, all information is subject to publication, at least in a form that will be anonymous (generally aggregate).*

Country	Operator	ISP only Total number of subscribers to packages that include a mobile access to the Internet (fixed: see other tab)

Country	Operator	Open questions regarding traffic management	Response
		What kind of application-agnostic traffic management techniques is used for e.g. congestion management?	
		What technologies (e.g. DPI) are used in the network to differentiate between packets?	
		Where are these techniques implemented in the network? (e.g. close to interconnection points)	
		Are there some plans for implementing additional traffic management practices in the future?	

Country	Additional open questions	
	Any additional comment	*Comments on any other conditions that may impact users' ability to access the content/application of*

Von: [redacted] [[redacted]@netcologne.de]

Gesendet: Montag, 16. Januar 2012 16:05

An: 114-Postfach

Cc: [redacted]; [redacted]; [redacted]; [redacted]

Betreff: AW: Förmliches Auskunftsersuchen Verkehrsmanagement

Sehr geehrter Herr [redacted],

[redacted]

[redacted]:

[redacted]:

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]:

[redacted]

Mit freundlichen Grüßen

[redacted]

[redacted]

NETCOLOGNE Gesellschaft für Telekommunikation mbH Am Coloneum 9 | 50829 Köln

Tel: [redacted] | Fax: [redacted] | Mobil: [redacted] www.netcologne.de

Geschäftsführer:

[redacted]

[redacted]

[redacted]

NETCOLOGNE Gesellschaft für Telekommunikation mbH Am Coloneum 9 | 50829 Köln

Tel: [redacted] | Fax: [redacted] | Mobil: [redacted] www.netcologne.de

Geschäftsführer:

[redacted]

[redacted]

[redacted]

-----Ursprüngliche Nachricht-----

Von: [redacted]@BNetzA.de [mailto:[redacted]@BNetzA.de]

Gesendet: Donnerstag, 15. Dezember 2011 09:18

An: [redacted]

Cc: [redacted]@BNetzA.de; [redacted]@BNetzA.de

Betreff: Förmliches Auskunftsersuchen Verkehrsmanagement

<<[redacted]>> <<EC-BEREC TM Questionnaire.xls>> <<Schreiben_Provider.pdf>> <<EC-BEREC TM Instructions to respondents.pdf>>

Sehr geehrter Herr [redacted],

anbei erhalten Sie vorab per E-Mail ein förmliches Auskunftsersuchen der Bundesnetzagentur zum Thema Verkehrsmanagement durch Anbieter elektronischer Informationsdienste. Ziel des Auskunftsersuchens ist es detailliertere Informationen bzgl. der Blockierung oder Behinderung von Anwendungen sowie der Verlangsamung oder Verschlechterung des Datenverkehrs zu gewinnen. GEREK und die Kommission haben daher einen Fragebogen zum Verkehrsmanagement konzipiert, der sich an Anbieter elektronischer Kommunikationsdienste richtet. Auf Basis der Ergebnisse dieser Untersuchung wird die Kommission entscheiden, ob ggf. zusätzliche Leitlinien zur Netzneutralität erforderlich sind.

Anliegend erhalten Sie das förmliche Auskunftsersuchen der Bundesnetzagentur sowie die drei dazugehörigen Anlagen:

- den Fragebogen

- ein gemeinsames Anschreiben von GEREK und der Kommission sowie

- ein Schreiben mit näheren Erläuterungen zum Ausfüllen des Fragebogens.

Mit freundlichen Grüßen

[redacted]

[redacted]

Country	Operator	Type of measure*		Description of the measure	ISP only Objective	ISP only Method of implementation (if applicable)	ISP only Number of subscribers having a subscription where this measure is implemented	How is the user informed?	Can the user activate/deactivate the measure? How?	Protection of business secret
DE	QSC	User's access is blocked/throttled, e.g. after having downloaded/uploaded a certain amount of data.		No blocking or throttling						
DE	QSC	If you offer specialized services (e. g. facilities-based telephony and television over broadband as opposed to "over the top" applications), how does this affect the Internet access traffic on the same access		Telephony separated and protected	*Secure service quality in telephony, as this a substitute to PSTN and customer expects same QoS*	*For residential: Separate VLANs in the Access and QoS in the concentration and backbone networks. For business: BRAS policy*	all	Information for business users explaining the feature	No	Method of implementation, as competitors may derive benefits from this knowledge. In aggregate terms it can be published.
DE	QSC	Different priority levels within Internet access traffic	*Examples of measures that depend on the type of protocol or application (mail, video, web, etc.) accessed via Internet:*							
DE	QSC		P2P file sharing is blocked/throttled	No blocking or throttling						
DE	QSC		VoIP is blocked/throttled	No blocking or throttling						
DE	QSC		Other specific kind of traffic (port, protocol, application, usage, etc) is blocked/throttled	No blocking or throttling						
DE	QSC		Specific application/content provider (e.g. website or VoIP provider) is blocked/throttled	No blocking or throttling						
DE	QSC		Specific type of over-the-top traffic given preferential treatment (e.g. specific content/application and/or specific application/content provider)	No blocking or throttling						
DE	QSC	Restriction on the type of terminal allowed, or tiered pricing depending on the terminal used		No						
DE	QSC	Other relevant practice	To be completed with other types of measures - *add as many lines as extra practices*	No						
		* If several effective measures fall in the same category, add one line per measure	***Expected answer:***	*Description of the measure, in terms of impact for the users*	*Reason(s) for the implementation of the measure (e.g. congestion management, network security, law enforcement, commercial terms)*	*How the measure is implemented (technically) and, if applicable, which conditions trigger it (e.g. threshold of data consumption). If the measure is not technically enforced, state: "N/A".*	*Number of subscribers to the packages where this measure is implemented*	*Quotation of the relevant contractual terms, plus any other type of information given to the user.*	*Yes' or 'No' If Yes, specify how, technically (which actions have to be taken by the user) and commercially (free/paying option).*	*If some information in a specific row is considered confidential, please mention precisely which parts should not be individually disclosed, and why. Reminder: in any case, all information is subject to publication, at least in a form that will be anonymous (generally aggregate).*
DE	QSC									

Country	Operator	ISP only Total number of subscribers to packages that include a fixed access to the Internet (mobile: see other tab)
DE	QSC	40000

Country	Operator	Open questions regarding traffic management	Response
DE	QSC	What kind of application-agnostic traffic management techniques is used for e.g. congestion management?	DSCP / ToS marking on network borders, and an apropriate QoS-weighting / prioritization within the transport network (pw, wfq, pwfq, wrr, wred, etc.)
DE	QSC	What technologies (e.g. DPI) are used in the network to differentiate between packets?	Type of service in IP / Exp in MPLS
DE	QSC	Where are these techniques implemented in the network? (e.g. close to interconnection points)	Network Border, Edge Layer
DE	QSC	Are there some plans for implementing additional traffic management practices in the future?	not yet

Country	Additional open questions	
	Any additional comment	
		Comments on any other conditions that may impact users' ability to access the content/application of their choice

Country	Operator	Type of measure*		Description of the measure	ISP only Objective	ISP only Method of implementation (if applicable)	ISP only Number of subscribers having a subscription where this measure is implemented	How is the user informed?	Can the user activate/deactivate the measure? How?	Protection of business secret
DE		User's access is blocked/throttled, e.g. after having downloaded/uploaded a certain amount of data.								
DE		If you offer specialized services, how does this affect the Internet access traffic on the same access								
DE		Different priority levels within Internet access traffic	*Examples of measures that depend on the type of protocol or application (mail, video, web, etc.) accessed via internet:*							
DE			P2P file sharing is blocked/throttled							
DE			VoIP is blocked/throttled							
DE			Instant Messaging services are blocked/throttled							
DE			Other specific kind of traffic (port, protocol, application, usage, etc) is blocked/throttled							
DE			Specific application/content provider (e.g. website or VoIP provider) is blocked/throttled							
DE			Specific type of over-the-top traffic given preferential treatment (e.g. specific content/application and/or specific application/content provider)							
DE		Restriction on the type of terminal allowed, or tiered pricing depending on the terminal used								
DE		Other relevant practice	To be completed with other types of measures - *add as many lines as extra practices*							
DE		* If several effective measures fall in the same category, add one line per measure		***Expected answer:*** *Description of the measure, in terms of impact for the users*	*Reason(s) for the implementation of the measure (e.g. congestion management, network security, law enforcement, commercial terms)*	*How the measure is implemented (technically) and, if applicable, which conditions trigger it (e.g. threshold of data consumption). If the measure is not technically enforced, state: "N/A".*	*Number of subscribers to the packages where this measure is implemented*	*Quotation of the relevant contractual terms, plus any other type of information given to the user.*	*Yes' or 'No' If Yes, specify how, technically (which actions have to be taken by the user) and commercially (free/paying option).*	*If some information in a specific row is considered confidential, please mention precisely which parts should not be individually disclosed, and why. Reminder: in any case, all information is subject to publication, at least in a form that will be anonymous (generally aggregate).*

Country	Operator	ISP only Total number of subscribers to packages that include a mobile access to the Internet (fixed: see other tab)

Country	Operator	Open questions regarding traffic management	Response
		What kind of application-agnostic traffic management techniques is used for e.g. congestion management?	
		What technologies (e.g. DPI) are used in the network to differentiate between packets?	
		Where are these techniques implemented in the network? (e.g. close to interconnection points)	
		Are there some plans for implementing additional traffic management practices in the future?	

Country	Additional open questions	
	Any additional comment	
		Comments on any other conditions that may impact users' ability to access the content/application of their choice

Country	Operator	Type of measure*	Description of the measure	ISP only Objective	ISP only Method of implementation (if applicable)	ISP only Number of subscribers having a subscription where this measure is implemented	How is the user informed?	Can the user activate/deactivate the measure? How?	Protection of business secret
DE	Telefónica Germany under the brands "Alice" and "O2 dsl"	User's access is blocked/throttled, e.g. after having downloaded/uploaded a certain amount of data.	[redacted]						
		If you offer specialized services (e. g. facilities-based telephony and television over broadband as opposed to "over the top" applications), how does this affect the Internet access traffic on the same access							
		Different priority levels within Internet access traffic — *Examples of measures that depend on the type of protocol or application (mail, video, web, etc.) accessed via Internet:* P2P file sharing is blocked/throttled							
		VoIP is blocked/throttled							
		Other specific kind of traffic (port, protocol, application, usage, etc) is blocked/throttled							
		Specific application/content provider (e.g. website or VoIP provider) is blocked/throttled							
		Specific type of over-the-top traffic given preferential treatment (e.g. specific content/application and/or specific application/content provider)							
		Restriction on the type of terminal allowed, or tiered pricing depending on the terminal used							
		Other relevant practice — To be completed with other types of measures - *add as many lines as extra practices*							
		* If several effective measures fall in the same category, add one line per measure	*Expected answer:* *Description of the measure, in terms of impact for the users*	*Reason(s) for the implementation of the measure (e.g. congestion management, network security, law enforcement, commercial terms)*	*How the measure is implemented (technically) and, if applicable, which conditions trigger it (e.g. threshold of data consumption). If the measure is not technically enforced, state: "N/A".*	*Number of subscribers to the packages where this measure is implemented*	*Quotation of the relevant contractual terms, plus any other type of information given to the user.*	*Yes" or "No* *If Yes, specify how, technically (which actions have to be taken by the user) and commercially (free/paying option).*	*If some information in a specific row is considered confidential, please mention precisely which parts should not be individually disclosed, and why. Reminder: In any case, all information is subject to publication, at least in a form that will be anonymous (generally aggregate).*

Country	Operator	ISP only Total number of subscribers to packages that include a fixed access to the Internet (mobile: see other tab)
		[redacted]

Country	Operator	Open questions regarding traffic management	Response
		What kind of application-agnostic traffic management techniques is used for e.g. congestion management?	[redacted]
		What technologies (e.g. DPI) are used in the network to differentiate between packets?	
		Where are these techniques implemented in the network? (e.g. close to interconnection points)	
		Are there some plans for implementing additional traffic management practices in the future?	

Country	Additional open questions
	Any additional comment — [redacted] — *Comments on any other conditions that may impact users' ability to access the content/application of their choice*

Telefónica Germany GmbH Co. OHG

Mobile access

Country	Operator	Type of measure*	Description of the measure	ISP only Objective	ISP only Method of implementation (if applicable)	ISP only Number of subscribers having a subscription where this measure is implemented	How is the user informed?	Can the user activate/deactivate the measure? How?	Protection of business secret
DE	Telefónica under brand name O2	User's access is blocked/throttled, e.g. after having downloaded/uploaded a certain amount of data.	[redacted]						
		If you offer specialized services, how does this affect the Internet access traffic on the same access							
		Different priority levels within Internet access traffic	*Examples of measures that depend on the type of protocol or application (mail, video, web, etc.) accessed via Internet:*						
			P2P file sharing is blocked/throttled						
			VoIP is blocked/throttled						
			Instant Messaging services are blocked/throttled						
			Other specific kind of traffic (port, protocol, application, usage, etc) is blocked/throttled						
			Specific application/content provider (e.g. website or VoIP provider) is blocked/throttled						
			Specific type of over-the-top traffic given preferential treatment (e.g. specific content/application and/or specific application/content provider)						
		Restriction on the type of terminal allowed, or tiered pricing depending on the terminal used							
		Other relevant practice	To be completed with other types of measures - *add as many lines as extra practices*						
		* If several effective measures fall in the same category, add one line per measure	*Expected answer:*	*Description of the measure, in terms of impact for the users*	*Reason(s) for the implementation of the measure (e.g. congestion management, network security, law enforcement, commercial terms)*	*How the measure is implemented (technically) and, if applicable, which conditions trigger it (e.g. threshold of data consumption). If the measure is not technically enforced, state: "N/A".*	*Number of subscribers to the packages where this measure is implemented*	*Quotation of the relevant contractual terms, plus any other type of information given to the user.*	*'Yes' or 'No' If Yes, specify how, technically (which actions have to be taken by the user) and commercially (free/paying option).*	*If some information in a specific row is considered confidential, please mention precisely which parts should not be individually disclosed, and why. Reminder: in any case, all information is subject to publication, at least in a form that will be anonymous (generally aggregate).*

Country	Operator	ISP only Total number of subscribers to packages that include a mobile access to the Internet (fixed: see other tab)
		[redacted]

Country	Operator	Open questions regarding traffic management	Response
		What kind of application-agnostic traffic management techniques is used for e.g. congestion management?	[redacted]
		What technologies (e.g. DPI) are used in the network to differentiate between packets?	
		Where are these techniques implemented in the network? (e.g. close to interconnection points)	
		Are there some plans for implementing additional traffic management practices in the future?	

Country	Additional open questions	
	Any additional comment	[redacted]
		Comments on any other conditions that may impact users' ability to access the content/application of their choice

[redacted]

Answers to the open questions

I. What kind of application-agnostic traffic management techniques is used for e.g. congestion management?

[redacted]

One could also argue that over-provisioning best effort is a form of application agnostic traffic management. However, the traditional over-provisioning approach is no longer economically sustainable, i.e. investment in capacity extension cannot be justified when faced with exponentially growing traffic volumes and ever decreasing price levels at the same time.

Introducing QoS-differentiation and traffic prioritization would allow for a more cost effective approach to satisfy demand than over-provisioning. The increasing quality of transmission requirements of the new applications mentioned, require additional investments from the ISP side. Whether the same quality of service has to be provided to all applications has a huge impact on the scope of the investment. Economic research finds that, to provide the same level of quality to new and traditional applications, ISPs would need to invest 60% more into infrastructure capacity than if differentiation in quality of service is allowed.[2]

[redacted]. Due to limited spectrum availability, resources within mobile access networks will always be limited (i.e. economically scarce). These scarce resources have to be allocated in the most efficient way. This requires a distinction between specific traffic "types" and traffic management based on policies that reflect customer choice with regard to chosen tariff plans (e.g. Faire Use Policy).

The GSMA specifications have featured the following functions from the very beginning: performance management, security management, subscriber and equipment tracing, subscriber and equipment administration and charging administration, Bandwidth management (as implemented in the Home Location Register, HLR), QoS

[1] [redacted]

[2] ESMT CA, Assessment of a sustainable Internet model for the near future, p. 4

steering and Radio Access Network (RAN) selection. Without such traffic management techniques, an operator is neither in a position to use the limited network resources efficiently (to guarantee an appropriate quality of service to the benefit of all customers), nor to protect the network infrastructure against congestion or outage. Consequently, the key functions of traffic management in mobile networks are necessary prerequisites and had to be agreed upon before launching the first mobile services. As far as mobile IP traffic is concerned, these very basic specifications are application agnostic by design.

II. What technologies (e.g. DPI) are used in the network to differentiate between packets?

[redacted]

i) [redacted];

ii) [redacted];

iii) [redacted];

iv) [redacted].

[redacted]

- confidential, contains business secrets -

[redacted]

III. Where are these techniques implemented in the network? (e.g. close to interconnection points)

Please see above.

IV. Are there some plans for implementing additional traffic management practices in the future?

There is a clear need to test new business models in the market. Therefore, forward looking policies that best promote an open and innovative Internet should not get side tracked by discussing "if" network management should be allowed or not. Traffic management remains indispensable to enable the development of new and innovative services. If mechanisms for prioritization were no longer allowed, so-called quality insensitive services that require a relatively large bandwidth would crowd out quality sensitive services.

Traffic management is also an essential mechanism to enable the differentiation of products and services. Different services have specific quality requirements that go well beyond mere bandwidth[4]. Some new services like e-Health even depend on guaranteed levels of quality (QoS). In this respect, traffic management is an enabler for an increased variety of products and services as well as for further innovation on the Internet.

The ongoing discussions revealed that it will be necessary to further develop QoS-mechanisms in order to meet customer demand and ensure true interoperability across network borders. In doing so, players have to be most careful to not restrict future innovation (technologically as well as economically) on the networks themselves as well as on their edge, e.g. in services. To the contrary, the aim is to enable the development of new and innovative services by evolving our traffic management best practices to the benefit of the consumers and the whole internet ecosystem.

[3] [redacted]

[4] The most relevant parameters today are delay, jitter and packet loss.

Telekom

fixed access

Country	Operator	Type of measure*		Description of the measure	Objective	ISP only Method of implementation (if applicable)	ISP only Number of subscribers having a subscription where this measure is	How is the user informed?	Can the user activate/deactivate the measure? How?	Protection of business secret
Germany	Telekom Deutschland GmbH	User's access is blocked/throttled, e.g. after having downloaded/uploaded a certain amount of data.		[redacted]				Contract information and General Terms and Conditions	n/a	
Germany	Telekom Deutschland GmbH	If you offer specialized services (e. g. facilities-based telephony and television over broadband as opposed to "over the top" applications), how does this affect the Internet access traffic on the same access						Contract information and General Terms and Conditions	Yes, via tariff change	
Germany	Telekom Deutschland GmbH	Different priority levels within Internet access traffic	*Examples of measures that depend on the type of protocol or application (mail, video, web, etc.) accessed via Internet:*							
Germany	Telekom Deutschland GmbH		P2P file sharing is blocked/throttled							
Germany	Telekom Deutschland GmbH		VoIP is blocked/throttled							
Germany	Telekom Deutschland GmbH		Other specific kind of traffic (port, protocol, application, usage, etc) is blocked/throttled							
Germany	Telekom Deutschland GmbH		Specific application/content provider (e.g. website or VoIP provider) is blocked/throttled							
Germany	Telekom Deutschland GmbH		Specific type of over-the-top traffic given preferential treatment (e.g. specific content/application and/or specific application/content provider)							
Germany	Telekom Deutschland GmbH	Restriction on the type of terminal allowed, or tiered pricing depending on the terminal used								
Germany	Telekom Deutschland GmbH	Other relevant practice	To be completed with other types of measures - *add as many lines as extra practices*							
		* If several effective measures fall in the same category, add one line per measure		*Expected answer:*	*Description of the measure, in terms of impact for the users*	*Reason(s) for the implementation of the measure (e.g. congestion management, network security, law enforcement, commercial terms)*	*How the measure is implemented (technically) and, if applicable, which conditions trigger it (e.g. threshold of data consumption). If the measure is not technically enforced, state: "N/A".*	*Number of subscribers to the packages where this measure is implemented*	*Quotation of the relevant contractual terms, plus any other type of information given to the user.*	*Yes' or 'No' If Yes, specify how, technically (which actions have to be taken by the user) and commercially (free/paying option).*	*If some information in a specific row is considered confidential, please mention precisely which parts should not be individually disclosed, and why. Reminder: in any case, all information is subject to publication, at least in a form that will be anonymous (generally aggregate).*

Country	Operator	ISP only Total number of subscribers to packages that include a fixed access to the Internet (mobile: see other tab)
Germany	Telekom Deutschlan	[redacted]

Country	Operator	Open questions regarding traffic management	Response
Germany	Telekom Deutschland GmbH	What kind of application-agnostic traffic management techniques is used for e.g. congestion management?	
Germany	Telekom Deutschland GmbH	What technologies (e.g. DPI) are used in the network to differentiate between packets?	
Germany	Telekom Deutschland GmbH	Where are these techniques implemented in the network? (e.g. close to interconnection points)	
Germany	Telekom Deutschland GmbH	Are there some plans for implementing additional traffic management practices in the future?	

Country	Operator	Additional open questions	
Germany	Telekom Deutschland GmbH	Any additional comment	
			Comments on any other conditions that may impact users' ability to access the content/application of

Telekom

Mobile access

Country	Operator	Type of measure*		Description of the measu	ISP only Method of implementation (if	ISP only	ISP only Number of subscribers having a subscription where this measure is	How is the user informed?	Can the user activate/deactivate the measure? How?	Protection of business secret
Germany	Telekom Deutschland GmbH	User's access is blocked/throttled, e.g. after having downloaded/uploaded a certain amount of data.		Fair Use Policy (FUP)	[redacted]			SMS and Web Page	Yes, via tariff change or spe repurchase (SMS, web page	[redacted]
Germany	Telekom Deutschland GmbH	If you offer specialized services, how does this affect the Internet access traffic on the same access		n/a						
Germany	Telekom Deutschland GmbH	Different priority levels within Internet access traffic	*Examples of measures that depend on the type of protocol or application (mail, video, web, etc.) accessed via Internet:*							
Germany	Telekom Deutschland GmbH		P2P file sharing is blocked/throttled	Traffic is analysed and throttled by SCE (Service Control Engine)				General Business Terms / Tariff Information handout	Yes, via tariff change or by purchasing a data option	
Germany	Telekom Deutschland GmbH		VoIP is blocked/throttled	Traffic is analysed and throttled by SCE (Service Control Engine)				General Business Terms / Tariff Information handout	Yes, via tariff change or by purchasing a data option	
Germany	Telekom Deutschland GmbH		Instant Messaging services are blocked/throttled	Service prioritisation not applied				General Business Terms (Pricelist)		
Germany	Telekom Deutschland GmbH		Other specific kind of traffic (port, protocol, application, usage, etc) is blocked/throttled	APN controled Tethering				General Business Terms / Tariff Information handout	Yes, via tariff change or by purchasing a data option	
Germany	Telekom Deutschland GmbH		Specific application/content provider (e.g. website or VoIP provider) is blocked/throttled	Traffic is analysed and throttled by SCE (Service Control Engine)				General Business Terms / Tariff Information handout	Yes, via tariff change or by purchasing a data option	
Germany	Telekom Deutschland GmbH		Specific type of over-the-top traffic given preferential treatment (e.g. specific content/application and/or specific application/content provider)	n/a						
Germany	Telekom Deutschland GmbH	Restriction on the type of terminal allowed, or tiered pricing depending on the terminal used		IMEI Fencing				Contract Information and General Terms and Conditions	Yes, via tariff change.	
Germany	Telekom Deutschland GmbH	Other relevant practice	To be completed with other types of measures - *add as many lines as extra practices*	SpeedProxy				Tariff information handout	Yes, via a web page	
		* If several effective measures fall in the same category, add one line per measure		***Expected answer:*** *Description of the measure, in terms of impact for the users*	*Reason(s) for the implementation of the measure (e.g. congestion management, network security, law enforcement, commercial terms)*	*How the measure is implemented (technically) and, if applicable, which conditions trigger it (e.g. threshold of data consumption). If the measure is not technically enforced, state: "N/A".*	*Number of subscribers to the packages where this measure is implemented*	*Quotation of the relevant contractual terms, plus any other type of information given to the user.*	*'Yes' or 'No' If Yes, specify how, technically (which actions have to be taken by the user) and commercially (free/paying option).*	*If some information in a specific row is considered confidential, please mention precisely which parts should not be individually disclosed, and why. Reminder: in any case, all information is subject to publication, at least in a form that will be anonymous (generally aggregate).*

Country	Operator	ISP only Total number of subscribers to packages that include a mobile access to the Internet (fixed: see other tab)
Germany	Telekom Deutschland	[redacted]

Country	Operator	Open questions regarding traffic management	Response
Germany	Telekom Deutschland GmbH	What kind of application-agnostic traffic management techniques is used for e.g. congestion management?	
Germany	Telekom Deutschland GmbH	What technologies (e.g. DPI) are used in the network to differentiate between packets?	
Germany	Telekom Deutschland GmbH	Where are these techniques implemented in the network? (e.g. close to interconnection points)	
Germany	Telekom Deutschland GmbH	Are there some plans for implementing additional traffic management practices in the future?	

Country		Additional open questions
Germany	Telekom Deutschland GmbH	Any additional comment
		Comments on any other conditions that may impact users' ability to access the content/application of their choice

Unitymedia KabelBW

Fixed access

Country	Operator	Type of measure*		Description of the measure	Objective	ISP only Method of implementation (if applicable)	ISP only Number of subscribers having a subscription where this measure is implemented	How is the user informed?	Can the user activate/deactivate the measure? How?	Protection of business secret
DE		User's access is blocked/throttled, e.g. after having downloaded/uploaded a certain amount of data.		[redacted]						
DE		If you offer specialized services (e. g. facilities-based telephony and television over broadband as opposed to "over the top" applications), how does this affect the Internet access traffic on the same access								
DE		Different priority levels within Internet access traffic	*Examples of measures that depend on the type of protocol or application (mail, video, web, etc.) accessed via Internet:*							
DE			P2P file sharing is blocked/throttled							
DE			VoIP is blocked/throttled							
DE			Other specific kind of traffic (port, protocol, application, usage, etc) is blocked/throttled							
DE			Specific application/content provider (e.g. website or VoIP provider) is blocked/throttled							
DE			Specific type of over-the-top traffic given preferential treatment (e.g. specific content/application and/or specific application/content provider)							
DE		Restriction on the type of terminal allowed, or tiered pricing depending on the terminal used								
DE		Other relevant practice	To be completed with other types of measures - *add as many lines as extra practices*							
			Expected answer:	*Description of the measure, in terms of impact for the users*	*Reason(s) for the implementation of the measure (e.g. congestion management, network security, law enforcement, commercial terms)*	*How the measure is implemented (technically) and, if applicable, which conditions trigger it (e.g. threshold of data consumption). If the measure is not technically enforced, state: "N/A".*	*Number of subscribers to the packages where this measure is implemented*	*Quotation of the relevant contractual terms, plus any other type of information given to the user.*	*Yes' or 'No' If Yes, specify how, technically (which actions have to be taken by the user) and commercially (free/paying option).*	*If some information in a specific row is considered confidential, please mention precisely which parts should not be individually disclosed, and why. Reminder: in any case, all information is subject to publication, at least in a form that will be anonymous (generally aggregate).*

* If several effective measures fall in the same category, add one line per measure

Country	Operator	ISP only Total number of subscribers to packages that include a fixed access to the Internet (mobile: see other tab)
DE	Kabel BW	[redacted]

Country	Operator	Open questions regarding traffic management	Response
DE		What kind of application-agnostic traffic management techniques is used for e.g. congestion management?	[redacted]
DE		What technologies (e.g. DPI) are used in the network to differentiate between packets?	
DE		Where are these techniques implemented in the network? (e.g. close to interconnection points)	
DE		Are there some plans for implementing additional traffic management practices in the future?	

Country	Additional open questions	
DE	Any additional comment	[redacted]

Comments on any other conditions that may impact users' ability to access the

Unitymedia KabelBW

Fixed access

Country	Operator	Type of measure*		Description of the measure	Objective	Method of implementation (if applicable)	Number of subscribers having a subscription where this measure is implemented	How is the user informed?	Can the user activate/deactivate the measure? How?	Protection of business secret
					ISP only	ISP only	ISP only			
DE		User's access is blocked/throttled, e.g. after having downloaded/uploaded a certain amount of data.		[redacted]						
DE		If you offer specialized services (e. g. facilities-based telephony and television over broadband as opposed to "over the top" applications), how does this affect the Internet access traffic on the same access								
DE		Different priority levels within Internet access traffic	*Examples of measures that depend on the type of protocol or application (mail, video, web, etc.) accessed via Internet:*							
DE			P2P file sharing is blocked/throttled							
DE			VoIP is blocked/throttled							
DE			Other specific kind of traffic (port, protocol, application, usage, etc) is blocked/throttled							
DE			Specific application/content provider (e.g. website or VoIP provider) is blocked/throttled							
DE			Specific type of over-the-top traffic given preferential treatment (e.g. specific content/application and/or specific application/content provider)							
DE		Restriction on the type of terminal allowed, or tiered pricing depending on the terminal used								
DE		Other relevant practice	To be completed with other types of measures - *add as many lines as extra practices*							
			Expected answer:	*Description of the measure, in terms of impact for the users*	*Reason(s) for the implementation of the measure (e.g. congestion management, network security, law enforcement, commercial terms)*	*How the measure is implemented (technically) and, if applicable, which conditions trigger it (e.g. threshold of data consumption). If the measure is not technically enforced, state: "N/A".*	*Number of subscribers to the packages where this measure is implemented*	*Quotation of the relevant contractual terms, plus any other type of information given to the user.*	*'Yes' or 'No' If Yes, specify how, technically (which actions have to be taken by the user) and commercially (free/paying option).*	*If some information in a specific row is considered confidential, please mention precisely which parts should not be individually disclosed, and why. Reminder: in any case, all information is subject to publication, at least in a form that will be anonymous (generally aggregate).*

* If several effective measures fall in the same category, add one line per measure

Country	Operator	Total number of subscribers to packages that include a fixed access to the Internet (mobile: see other tab)
		ISP only
DE	Kabel BW	[redacted]

Country	Operator	Open questions regarding traffic management	Response
DE		What kind of application-agnostic traffic management techniques is used for e.g. congestion management?	[redacted]
DE		What technologies (e.g. DPI) are used in the network to differentiate between packets?	
DE		Where are these techniques implemented in the network? (e.g. close to interconnection points)	
DE		Are there some plans for implementing additional traffic management practices in the future?	

Country	Additional open questions	
DE	Any additional comment	*Comments on any other conditions that may impact users' ability to access the*

Versatel Deutschland GmbH

Fixed access

Country	Operator	Type of measure*		Description of the measure	Objective	ISP only Method of implementation (if applicable)	ISP only Number of subscribers having a subscription where this measure is implemented	How is the user informed?	Can the user activate/deactivate the measure? How?	Protection of business secret
Germany	Versatel	User's access is blocked/throttled, e.g. after having downloaded/uploaded a certain amount of data		[redacted]						
Germany	Versatel	If you offer specialized services (e. g. facilities-based telephony and television over broadband as opposed to "over the top" applications), how does this affect the Internet access traffic on the same access								
Germany	Versatel	Different priority levels within Internet access traffic	*Examples of measures that depend on the type of protocol or application (mail, video, web, etc.) accessed via Internet:*							
Germany	Versatel		P2P file sharing is blocked/throttled							
Germany	Versatel		VoIP is blocked/throttled							
Germany	Versatel		Other specific kind of traffic (port, protocol, application, usage, etc) is blocked/throttled							
Germany	Versatel		Specific application/content provider (e.g. website or VoIP provider) is blocked/throttled							
Germany	Versatel		Specific type of over-the-top traffic given preferential treatment (e.g. specific content/application and/or specific application/content provider)							
Germany	Versatel	Restriction on the type of terminal allowed, or tiered pricing depending on the terminal used								
Germany	Versatel	Other relevant practice	To be completed with other types of measures - *add as many lines as extra practices*							
		* If several effective measures fall in the same category, add one line per measure		***Expected answer:*** *Description of the measure, in terms of impact for the users*	*Reason(s) for the implementation of the measure (e.g. congestion management, network security, law enforcement, commercial terms)*	*How the measure is implemented (technically) and, if applicable, which conditions trigger it (e.g. threshold of data consumption). If the measure is not technically enforced, state: "N/A".*	*Number of subscribers to the packages where this measure is implemented*	*Quotation of the relevant contractual terms, plus any other type of information given to the user.*	*'Yes' or 'No' If Yes, specify how, technically (which actions have to be taken by the user) and commercially (free/paying option).*	*If some information in a specific row is considered confidential, please mention precisely which parts should not be individually disclosed, and why. Reminder: in any case, all information is subject to publication, at least in a form that will be anonymous (generally aggregate).*

ISP only

Country	Operator	Total number of subscribers to packages that include a fixed access to the Internet (mobile: see other tab)
Germany	Versatel	[redacted]

Country	Operator	Open questions regarding traffic management	Response
Germany	Versatel	What kind of application-agnostic traffic management techniques is used for e.g. congestion management?	[redacted]
Germany	Versatel	What technologies (e.g. DPI) are used in the network to differentiate between packets?	
Germany	Versatel	Where are these techniques implemented in the network? (e.g. close to interconnection points)	
Germany	Versatel	Are there some plans for implementing additional traffic management practices in the future?	

[redacted]

Country	Additional open questions	
	Any additional comment	[redacted]

conditions that may impact users' ability to access the content/application of their choice

Versatel Deutschland GmbH

mobile access

Country	Operator	Type of measure*		Description of the measure	Objective	Method of implementation (if applicable)	Number of subscribers having a subscription where this measure is implemented	How is the user informed?	Can the user activate/deactivate the measure? How?	Protection of business secret
						ISP only	ISP only	ISP only		
Germany	Versatel	User's access is blocked/throttled, e.g. after having downloaded/uploaded a certain amount of data.		[redacted]						
Germany	Versatel	If you offer specialized services, how does this affect the Internet access traffic on the same access								
Germany	Versatel	Different priority levels within Internet access traffic	*Examples of measures that depend on the type of protocol or application (mail, video, web, etc.) accessed via Internet:*							
Germany	Versatel		P2P file sharing is blocked/throttled							
Germany	Versatel		VoIP is blocked/throttled							
Germany	Versatel		Instant Messaging services are blocked/throttled							
Germany	Versatel		Other specific kind of traffic (port, protocol, application, usage, etc) is blocked/throttled							
Germany	Versatel		Specific application/content provider (e.g. website or VoIP provider) is blocked/throttled							
Germany	Versatel		Specific type of over-the-top traffic given preferential treatment (e.g. specific content/application and/or specific application/content provider)							
Germany	Versatel	Restriction on the type of terminal allowed, or tiered pricing depending on the terminal used								
Germany	Versatel	Other relevant practice	To be completed with other types of measures - *add as many lines as extra practices*							
		* If several effective measures fall in the same category, add one line per measure		*Expected answer:*	*Description of the measure, in terms of impact for the users*	*Reason(s) for the implementation of the measure (e.g. congestion management, network security, law enforcement, commercial terms)*	*How the measure is implemented (technically) and, if applicable, which conditions trigger it (e.g. threshold of data consumption). If the measure is not technically enforced, state: "N/A".*	*Number of subscribers to the packages where this measure is implemented*	*Quotation of the relevant contractual terms, plus any other type of information given to the user.*	*'Yes' or 'No' If Yes, specify how, technically (which actions have to be taken by the user) and commercially (free/paying option).*	*If some information in a specific row is considered confidential, please mention precisely which parts should not be individually disclosed, and why. Reminder: in any case, all information is subject to publication, at least in a form that will be anonymous (generally aggregate).*

Country	Operator	Total number of subscribers to packages that include a mobile access to the Internet (fixed: see other tab)
		ISP only
Germany	Versatel	[redacted]

Country	Operator	Open questions regarding traffic management	Response
Germany	Versatel	What kind of application-agnostic traffic management techniques is used for e.g. congestion management?	[redacted]
Germany	Versatel	What technologies (e.g. DPI) are used in the network to differentiate between packets?	
Germany	Versatel	Where are these techniques implemented in the network? (e.g. close to interconnection points)	
Germany	Versatel	Are there some plans for implementing additional traffic management practices in the future?	

Country		Additional open questions	
Germany	Versatel	Any additional comment	[redacted]
			Comments on any other conditions that may impact users' ability to access the content/application of

Contractual terms and additional information

The user can find the subsequent contractual terms also in additional information documents ("InfoDok") and on Vodafone's end-user-homepage. The conditions are described in tariff tables and in footnotes. The quoted conditions refer to the currently marketed tariff portfolio.

Speed throttling

Segment	Tariff	Quotation of the relevant contractual terms
Consumer	data-only tariffs ("Mobile Internet Flat")	After reaching the contracted data volume within a payment cycle, the maximum data rate is limited to 64kbps. *„Bis zu einem Datenvolumen von 1 GB (MobileInternet Flat 3,6 light), 5 GB (MobileInternet Flat 7,2), 7,5 GB (MobileInternet Flat 14,4) ,10 GB (MobileInternet Flat 21,6) bzw. 20GB (MobileInternet Flat 50,0) steht Ihnen im jeweiligen Abrechnungszeitraum die aktuell maximal verfügbare Bandbreite bis zu 3,6, 7,2, 14,4, 21,6 bzw. 50,0 Mbit/s zur Verfügung. Nach Erreichen der jeweiligen Volumina wird die Übertragungsgeschwindigkeit auf max. 64 kbit/s reduziert."*
	data+voice bundles ("SuperFlat Internet", "CallYa")	After exhaustion of the data volume a bandwidth of 64 kbps is available. *„Nach Verbrauch des Daten-Volumens steht Ihnen eine Bandbreite bis zu 64 KBit/s zur Verfügung."* [...] a national data volume of 200 MB with max. 7.2 Mbps download (afterwards max. 64 kbps). *„[...] ein nationales Datenvolumen von 200 MB mit max. 7,2 MBit/s im Download (danach max. 64KBit/s)"*
	Stationary 3G tariff ("Surf-Sofort-Paket UMTS")	Up to a data volume of 10 GB per payment cycle the highest possible bandwidth is available; from 10 GB onwards GPRS-bandwidth is available. *„Bis zu einem Datenvolumen von 10 GB pro Abrechnungszeitraum steht Ihnen die größtmögliche Bandbreite zur Verfügung, ab 10 GB steht Ihnen GPRS-Bandbreite zur Verfügung."*
	Stationary LTE tariffs ("LTE Zuhause")	From 5/10/15/30 GB at most 384 kbps is available. *„Ab 5 / 10 / 15 / 30 GB stehen Ihnen höchstens 384 KBit/s zur Verfügung."*
Enterprise	Data-only tariffs ("Mobile Connect")	After reaching the contracted data volume within a payment cycle, the maximum data rate is limited to 64kbps. *„Bei Mobile Connect Flat Light wird bis zu einem genutzten Datenvolumen von 1 GB im jeweiligen Abrechnungszeitraum eine Bandbreite bis zu 7,2 Mbit/s im Downstream bereitgestellt. Ab 1 GB stehen max. 64 kbit/s zur Verfügung. Bei Mobile Connect Flat wird bis zu einem genutzten Datenvolumen von 5 GB im jeweiligen Abrechnungszeitraum*

		eine Bandbreite von maximal 14,4 Mbit/s Downstream bereitgestellt; ab 5 GB stehen max. 64 kBit/s Downstream zur Verfügung. Bei Mobile Connect Flat 21,6 wird bis zu einem genutzten Datenvolumen von 10 GB im jeweiligen Abrechnungszeitraum eine Bandbreite von maximal 21,6 Mbit/ s Downstream bereitgestellt, ab 10 GB stehen max. 64 kBit/s Downstream zur Verfügung. Bei Mobile Connect XXL wird im jeweiligen Abrechnungszeitraum eine Bandbreite von maximal 21,6 Mbit/s Downstream bereitgestellt."
	Voice/data bundles ("Professional Plus")	After reaching the contracted data volume within a payment cycle, the maximum data rate is limited to 64kbps. „Nach Aufbrauchen des Inklusiv-Volumens steht eine Bandbreite von maximal 64kBit/s Downstream zur Verfügung."
	LTE tariffs ("LTE Zuhause")	After reaching the contracted data volume within a payment cycle, the maximum data rate is limited to 384 kbps. *„Bis zu einem Datenvolumen von 10 GB (LTE Zuhause Internet 7200 S), 15 GB (LTE Zuhause Internet 21600 S) bzw. 30 GB (LTE Zuhause Internet 50000 S) im jeweiligen Abrechnungszeitraum wird die jeweils aktuell verfügbare maximale Bandbreite von bis zu 7,2 / 21,6 bzw. 50 MBit/s bereitgestellt; darüber hinaus max. 384 KBit/s."*

Session capping

Segment	Tariff	Quotation of the relevant contractual terms
Consumer	Prepaid tariffs ("Web Sessions")	Irrespective of the booked time and after exceeding the included data volume downloads and uploads will be closed automatically. *„Darüber hinaus werden WebSessions National unabhängig von der gebuchten Zeit nach Ausschöpfung eines Datenvolumens von 1 GB bzw. 3 GB für Download und Upload automatisch beendet."*

Specialised services

Segment	Tariff	Quotation of the relevant contractual terms
Consumer	NGN-telephony usage via DSL	The performance of the access of DSL1000 and 2000 may be impaired in case of parallel usage of voice and internet access or parallel use of two voice channels. *„Bei den Paketen mit Vodafone DSL 1000 und 2000 kann bei gleichzeitiger Nutzung von Sprache und Internet oder 2 Sprachkanälen die Leistungsfähigkeit des Anschlusses beeinträchtigt sein."*
	TV usage via DSL	In case the DSL access is used in parallel for TV and/or VoIP and/or internet access limitations of the available bandwidth may occur. This is especially true for the reception of TV-

		services in parallel to loading big files from the internet. Establishment of a VoIP-connection is guaranteed by prioritisation independently of the other services. *„Bei gleichzeitiger Nutzung des Vodafone DSL-Anschlusses für die Inanspruchnahme von Leistungen des Produktes Vodafone TV und/oder für den Aufbau von Telefon-/ Fax-Verbindungen („Vodafone-Sprache") und/oder für den Zugang zum Internet („Vodafone-Internet") kann es zu Einschränkungen bei den über den Vodafone DSL-Anschluss und Vodafone TV nutzbaren Leistungen hinsichtlich der für die einzelne Leistung zur Verfügung stehenden Bandbreite kommen. Dieses gilt insbesondere für den Empfang oder das Aufzeichnen von TV-Programmen oder Videos über das Vodafone TV Center beim gleichzeitigen Laden größerer Dateien aus dem Internet auf einen Computer in seinem Haushalt. Die Übertragung der Services „Vodafone-Sprache" und von Leistungen des Produktes Vodafone TV (insbesondere Pakete und Vodafone Videothek) erfolgt priorisiert. Dabei ist sichergestellt, dass der Aufbau einer Verbindung (Leistung „Vodafone-Sprache") unabhängig von der für andere Zwecke genutzten Bandbreite möglich bleibt."*
	NGN-telephony usage via LTE	No terms.
Enterprise	NGN-telephony usage via DSL	If the available upstream-bandwidth is only 192 kbps, the performance of the access may be impaired in case of parallel usage of 2 voice channels or parallel sending of two faxes. „Wird [...] nur eine Bandbreite mit einem DSL-Upstream von bis zu 192 Kbit/s zur Verfügung gestellt, kann die Leistungsfähigkeit des Anschlusses bei der gleichzeitigen Nutzung von 2 Sprachkanälen beeinträchtigt werden und die gleichzeitige Versendung von zwei Faxen ist nicht möglich."
	NGN-telephony usage via LTE	No terms.

Blocking of Tethering, P2P, VoIP, IM

Segment	Tariff	Quotation of the relevant contractual terms
Consumer	data only ("Mobile Internet Flat")	Usage of voice over IP and peer-to-peer-communication is not allowed. *„Voice over IP und Peer to Peer Nutzung sind nicht gestattet."*
	data+voice bundles ("SuperFlat Internet", "CallYa")	Usage of VoIP, tethering and peer-to-peer is not allowed. *„Die Nutzung von Voice over IP, Tethering und Peer to Peer ist nicht gestattet."* The data volume may only be used by a mobile, voice over IP, peer to peer and instant messaging is excluded. *„Das Datenvolumen darf nur mit einem Handy genutzt werden, Voice over IP, Peer to Peer und Instant Messaging*

		sind ausgeschlossen."
	Stationary 3G tariff ("Surf-Sofort-Paket UMTS")	You may not use the tariff for voice-over-IP, instant messaging and peer-to-peer. *„Sie dürfen den Tarif nicht für Voice over IP, Instant Messaging und Peer to Peer nutzen."*
	Stationary LTE tariffs ("LTE Zuhause")	VoIP and peer-to-peer-communication is not allowed. *„Voice over IP und Peer to Peer-Kommunikation sind nicht gestattet."*
Enterprise	data only and data+voice bundles ("Mobile Connect", "Professional Plus")	Usage of voice over IP, instant messaging and peer-to-peer-connections is not allowed. *„Die Nutzung von Voice over IP, Instant Messaging und Peer-to-Peer-Verbindungen ist nicht gestattet."*
	Stationary LTE tariffs ("LTE Zuhause")	Usage of voice over IP and peer-to-peer-communication is not allowed. "Die Nutzung des Tarifes für Voice over IP und Peer-to-Peer Kommunikation ist nicht gestattet."

Remarks

Tariffs without throttling (mobile networks)

- Apart from the tariffs mentioned above there are also tariffs which do not throttle the maximum data rate but involve an extra payment after exceeding the basic contracted data volume.
- *„Bei Mobile Connect Small, Medium, Large gilt nach Überschreitung des Inklusivvolumens die Folgepreisgarantie. Diese stellt sicher, dass für das doppelte Daten-Volumen maximal der doppelte Preis berechnet wird, für das dreifache Daten-Volumen maximal der dreifache Preis usw. Der Folgepreis/MB wird so lange berechnet bis der Folgepreisumsatz dem Inklusivpreis entspricht. Ist dieser Preis erreicht, kann bis zum Erreichen der nächsten Folgestufe ohne weitere Kosten das Datenvolumen verbraucht werden, das dem Inklusivvolumen der Tarifoption bzw. des Tarifs entspricht (5 MB, 150 MB, 500 MB entsprechend)."*

Automatic session termination (mobile networks)

- Generally the tariffs reserve an automatic termination of a session after 24 hours.
- *„Vodafone behält sich vor, nach 24 Stunden jeweils eine automatische Trennung der Verbindung durchzuführen."*

Vodafone

Fixed Access

Country	Operator	Type of measure*		Description of the measure	Objective	Method of implementation (if applicable)	Number of subscribers having a subscription where this measure is implemented	How is the user informed?	Can the user activate/deactivate the measure? How?	Protection of business secret
						ISP only	ISP only	ISP only		
		User's access is blocked/throttled, e.g. after having downloaded/uploaded a certain amount of data.		**technical:** no blocking or throttling **contractual:** no blocking or throttling	**technical:** n/a **contractual:** n/a	n/a	n/a	n/a	n/a	
		If you offer specialized services (e. g. facilities-based telephony and television over broadband as opposed to "over the top" applications), how does this affect the Internet access traffic on the same access		Vodafone's NGN-telephony service and IPTV service are prioritised higher than Internet access thus limiting available bandwidth for Internet access in case NGN-telephony and/or IPTV services are used (dynamic bandwidth allocation). Prioritisation order (in descending order): Voice, Multicast TV+VoD, Best Effort Internet.	Ensure QoS for the specialised services to guarantee good end user experience.			Please see document "Contractual terms and additional information"	VoIP: Buy additional ISDN-option TV: no	Method of implementation Number of subscribers
		Different priority levels within Internet access traffic	*Examples of measures that depend on the type of protocol or application (mail, video, web, etc.) accessed via Internet:*							
			P2P file sharing is blocked/throttled	**technical:** no **contractual:** no	n/a	n/a	n/a	n/a	n/a	
			VoIP is blocked/throttled	**technical:** no **contractual:** no	n/a	n/a	n/a	n/a	n/a	
			Other specific kind of traffic (port, protocol, application, usage, etc) is blocked/throttled	**technical:** no **contractual:** no	n/a	n/a	n/a	n/a	n/a	
			Specific application/content provider (e.g. website or VoIP provider) is blocked/throttled	**technical:** no **contractual:** no	n/a	n/a	n/a	n/a	n/a	
			Specific type of over-the-top traffic given preferential treatment (e.g. specific content/application and/or specific application/content provider)	**technical:** no **contractual:** no	n/a	n/a	n/a	n/a	n/a	
		Restriction on the type of terminal allowed, or tiered pricing depending on the terminal used		**technical:** no **contractual:** no	n/a	n/a	n/a	n/a	n/a	
		Other relevant practice	To be completed with other types of measures - *add as many lines as extra practices*	no	n/a	n/a	n/a	n/a	n/a	
		* If several effective measures fall in the same category, add one line per measure	***Expected answer:***	*Description of the measure, in terms of impact for the users*	*Reason(s) for the implementation of the measure (e.g. congestion management, network security, law enforcement, commercial terms)*	*How the measure is implemented (technically) and, if applicable, which conditions trigger it (e.g. threshold of data consumption). If the measure is not technically enforced, state: "N/A".*	*Number of subscribers to the packages where this measure is implemented*	*Quotation of the relevant contractual terms, plus any other type of information given to the user.*	*Yes' or 'No' If Yes, specify how, technically (which actions have to be taken by the user) and commercially (free/paying option).*	*If some information in a specific row is considered confidential, please mention precisely which parts should not be individually disclosed, and why. Reminder: in any case, all information is subject to publication, at least in a form that will be anonymous (generally aggregate).*

Country	Operator	Total number of subscribers to packages that include a fixed access to the Internet (mobile: see other tab)
		ISP only

Country	Operator	Open questions regarding traffic management	Response
		What kind of application-agnostic traffic management techniques is used for e.g. congestion management?	

	What technologies (e.g. DPI) are used in the network to differentiate between packets? Where are these techniques implemented in the network? (e.g. close to interconnection points) Are there some plans for implementing additional traffic management practices in the future?

Country	Additional open questions
	Any additional comment

Comments on any other conditions that may impact users' ability to access the content/application of their choice

Vodafone

Mobile access

Country	Operator	Type of measure*	Description of the measure	Objective	Method of implementation (if applicable)	Number of subscribers having a subscription where this measure is implemented	How is the user informed?	Can the user activate/deactivate the measure? How?	Protection of business secret
				ISP only	ISP only	ISP only			
		User's access is blocked/throttled, e.g. after having downloaded/uploaded a certain amount of data.	**technical:** - Speed throttling (limination of the maximum bandwidth after reaching the contracted data volume): 2G/3G yes (64 kbps), LTE no - Rate capping (limitation of the maximum allowed data rate according to the contracted rate): 2G/3G no, LTE yes - Session capping for 2G/3G prepaid tariffs (blocking of the data connection after reaching the contracted data volume) **contractual:** - 2G/3G/LTE speed throttling (limitation of the maximum data rate to 64 kbit/s (2G/3G) and 384 kbit/s (LTE) respectively after reaching the contracted data volume) - 2G/3G/LTE rate capping (limitation of the maximum allowed data rate according to the contracted rate) - 2G/3G session capping for prepaid tariffs (blocking of the data connection after reaching the contracted data volume)	Ensuring network integrity by protection against exzessive usage (ensure fair usage) and thus allowing commercially feasible tariff designs. Customer protection against "billshock".			- Please see document "Contractual terms and additional information". - User is actively informed by SMS when reaching 90% and 100% of included highspeed volume (prepay customers are actively informed at 100%). - User can access information on used volume via web-site ("VodafoneCenter") and Vodafone Dashboard. In case included highspeed volume is reached customer is automatically redirected to VodafoneCenter.	Yes. User can buy additional highspeed volume in case of postpay customers. Prepay customers can only buy additional volume in specific smartphone tariffs. Additional volume can be bought via SMS or via web-interface.	Method of implementation Number of subscribers
If you offer specialized services, how does this affect the Internet access traffic on the same access			**technical:** Vodafone's NGN-telephony service (only in stationary LTE tariffs) are prioritised higher than Internet access thus limiting available bandwidth for Internet access in case telephony is used (dynamic bandwidth allocation). **contractual:** Traffic usage for NGN-telephony is not counted within the contracted data volume.	Ensure QoS for the specialized services to guarantee good end user experience.			Please see document "Contractual terms and additional information"	No	Method of implementation Number of subscribers
Different priority levels within Internet access traffic		*Examples of measures that depend on the type of protocol or application (mail, video, web, etc.) accessed via Internet:* P2P file sharing is blocked/throttled		Protecting average customers against heavy users with permanent traffic and allowing commercially feasible tariff designs.	n/a			Yes. In some postpay tariffs use of P2P/VoIP/IM is allowed. In other postpay tariffs customer can purchase additional packages allowing the use of P2P/VoIP/IM. In prepay tariffs use of P2P/VoIP/IM is generally not allowed. Purchase of additional packes is possible via customer service hotline or via Vodafone shop.	Method of implementation Number of subscribers
		VoIP is blocked/throttled	**technical:** no blocking or throttling **contractual:** depending on customer's tariff (see means to activate/deactivate measure)	Allowing commercially feasible tariff designs.	n/a		Please see document "Contractual terms and additional information".		Method of implementation Number of subscribers
		Instant Messaging services are blocked/throttled		Allowing commercially feasible tariff designs.	n/a				Method of implementation Number of subscribers
		Other specific kind of traffic (port, protocol, application, usage, etc) is blocked/throttled	**technical:** no blocking or throttling **contractual:** no	n/a	n/a	n/a	n/a	n/a	Method of implementation Number of subscribers
		Specific application/content provider (e.g. website or VoIP provider) is blocked/throttled	**technical:** no blocking or throttling **contractual:** no	n/a	n/a	n/a	n/a	n/a	Method of implementation Number of subscribers
		Specific type of over-the-top traffic given preferential treatment (e.g. specific content/application and/or specific application/content provider)	**technical:** no preferential treatment **contractual:** no	n/a	n/a	n/a	n/a	n/a	Method of implementation Number of subscribers

Mobile access

Restriction on the type of terminal allowed, or tiered pricing depending on the terminal used		**technical:** no blocking or throttling of tethering **contractual:** depending on customer's tariff	Allowing commercially feasible tariff designs.	n/a		Please see document "Contractual terms and additional information"	User can buy additional package.	
Other relevant practice	To be completed with other types of measures - *add as many lines as extra practices*							
	Allowance of incoming traffic	**technical:** In general, incoming traffic is only allowed as a response to an outgoing request. **contractual:** no	Ensuring network integrity and protection of users against viruses, hackers etc.			No active information.	No.	Method of implementation Number of subscribers
	Traffic Optimization	**technical:** Removing TCP windowing effects and compression of text, images, java script, etc. **contractual:** no	Optimisation of TCP protocol for usage in a mobile environment. Data reduction of internet traffic for the internal interfaces.			Yes: General information about service characteristics	Yes. User can change APN configuration, contact customer service hotline to change compression degree or customise compression degree via web-based "Performance-Manager" or via client-software "HighPerformance Client".	Method of implementation Number of subscribers
	Radio Channel Prioritization	**technical:** Not implemented. All data connections have the same priority. **contractual:** no offers	n/a	n/a	n/a	n/a	n/a	
	* If several effective measures fall in the same category, add one line per measure	***Expected answer:*** *Description of the measure, in terms of impact for the users*	*Reason(s) for the implementation of the measure (e.g. congestion management, network security, law enforcement, commercial terms)*	*How the measure is implemented (technically) and, if applicable, which conditions trigger it (e.g. threshold of data consumption). If the measure is not technically enforced, state: "N/A".*	*Number of subscribers to the packages where this measure is implemented*	*Quotation of the relevant contractual terms, plus any other type of information given to the user.*	*Yes' or 'No' If Yes, specify how, technically (which actions have to be taken by the user) and commercially (free/paying option).*	*If some information in a specific row is considered confidential, please mention precisely which parts should not be individually disclosed, and why. Reminder: in any case, all information is subject to publication, at least in a form that will be anonymous (generally aggregate).*

ISP only

Country	Operator	**Total number of subscribers to packages that include a mobile access to the Internet (fixed: see other tab)**

Country	Operator	**Open questions regarding traffic management**	**Response**
		What kind of application-agnostic traffic management techniques is used for e.g. congestion management	
		What technologies (e.g. DPI) are used in the network to differentiate between packets?	
		Where are these techniques implemented in the network? (e.g. close to interconnection points)	
		Are there some plans for implementing additional traffic management practices in the future?	

Country	**Additional open questions**
	Any additional comment

Comments on any other conditions that may impact users' ability to access the content/application of their choice