



The Industry position on the mandatory Interconnect Clearing House (ICH)

The MoC and the NCA has proposed and is in the process of implementing a Mandatory Interconnect Clearing House (ICH) to be operated by a privately owned monopoly.

This document is the industry position submitted to the NCA on the 19th of November with minor edits for ease of understanding.

Chapter Number	Section Number	Heading	Comment	Suggestion/ Proposed Amendments
	1	Summary of Consultations	Based on the details provided by the National Communications Authority (NCA) in its document, the Interconnect Clearing House (ICH) would create a monopoly with a single point of interconnectivity failure that would increase the potential for network disruption. It would also create an additional bureaucratic layer that would result in an increase in telecommunications cost to the subscriber as well compromise privacy and security. The NCA does not set out compelling reasons that outweigh these very real risks created to the public, the industry, and the regulatory environment.	NCA must provide compelling reasons for taking this risk



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	2 & 3	Summary of Consultations	The concept of an ICH is a complicated but important issue that requires detailed analysis and careful consideration. Setting a two week response period prevents any comprehensive public consultation on the matters raised herein, which would be of grave concern to consumers of communication services and the public at large, were they to become aware.	The response period should be extended to at least three months. Additionally the public must be made sufficiently aware of the ongoing consultation process through newspaper publications, and regional and national radio and TV announcements, similar to what was done during consultations for mobile number portability and other successful NCA initiatives.
	4	Summary of Consultations	NCA has mandated response to be electronically sent as e-mail, but the Annex A cover sheet allows for a signed hard copy submission. The required form set forth as the second page of Annex A is in PDF format, but this section requires submission in Microsoft Word format.	We are submitting our comments in both PDF and Microsoft Word formats, and in hard copy. NCA should allow submission by hard copy as an option, so as not to exclude members of the public without access to email
	6	Summary of Consultations	As NCA has indicated it shall make all submissions public, we expect those submissions to be unedited and complete.	We will examine what NCA publishes in respect of our submission, and we reserve the right to publish same independently.
	7	Summary of Consultations	NCA limits the scope of permitted comments in this section.	We will comment on the entire process as permitted in section 2.



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Chapter Number	Section Number	Heading	Comment	Suggestion/ Proposed Amendments
		Eligibility	The lack of any experience requirement poses a grave risk to communication and financial integrity as well as national security.	A qualified applicant must have a minimum of ten years experience operating an ICH in jurisdiction with more than five national mobile operators, at least two national fixed operators, and where all traffic is required to be passed through the ICH, as well as ISO 9001 certification for product quality, ISO 27001 for security management and IT service management (ITIL).
		Scope and Conditions of License	Contrary to the assertion by NCA, Section 7 of the CST (Amendment) Act 2013 (Act 864), does not give NCA the power to mandate the routing of traffic through a third party such as an ICH. Please refer to Chapter Number 3 for further comments.	NCA should limit its proposals to those permitted by law.
		Next Steps	We reiterate that the time allowed for the public consultation period and the rest of the processes are inadequate. Timelines for the entire process should allow adequate time for this initiative to be given due attention by the general public and other stakeholders.	See comments to Annex D.
1	1.1	General Information	CST Amendment Act 2013, Section 7 does not authorize NCA to issue an ICH license.	NCA should limit its proposals to those permitted by law.



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	1.2	Clearing House	NCA acknowledges in its second paragraph that seamless interconnection between the operators is one of the factors which has contributed to the industry's self-evident growth.	NCA has not provided any data that justifies a drastic, expensive, and dangerous approach such as ICH, as opposed to the methods that have already produced seamless interconnection.
	1.2	Clearing House	Contrary to NCA's assertion in its third paragraph, the addition of a third-party complicates the interconnect reconciliation process. In operator to operator interconnect, the originating and terminating parties directly compare their data for reconciliation purposes (and submit reconciliation statements to the NCA on a quarterly basis).	The existing direct interconnect regime should be maintained as required by law.
	1.2	Clearing House	<p>Proper financial governance requires that a company generate invoices based on its own information, subject to correction after review. Hence, contrary to the NCA's fourth paragraph, information from an external entity (ICH) is not authoritative for billing purposes.</p> <p>It is an inherent and impermissible conflict of interest for an entity performing revenue verification for government to also generate billing information for the operators.</p>	Operators should continue to generate interconnect invoices based on their own data as reconciled with their interconnect partners and verifiable by the NCA and Ghana Revenue Authority (GRA).



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Chapter Number	Section Number	Heading	Comment	Suggestion/ Proposed Amendments
	1.2	Clearing House	<p>In respect of paragraph five, we must note that nothing in this proposal or the process or timetable outlined, or previous monitoring arrangements put in place by NCA and GRA have generated any confidence at all.</p> <p>Mandatory traffic routing through the ICH reduces the effectiveness of the entire telecommunications sector, both financially and technically to the detriment of all participants and consumers. See details in our response to Chapter 3.</p> <p>In respect of paragraph six and figure 1, the proposal creates new layers of bureaucracy (administrative body), Government and the Regulator would control the administrative body while consumers ultimately bear the cost</p> <p>Figure 1 indicates that the ICH would be a member of the administrative body that has oversight of its activities; this is only one of several irreconcilable conflicts of interest. Furthermore, the interests of the consumer, on whom additional financial burden would be placed, cannot be guaranteed.</p>	<p>Neither the operators nor the general public should have any confidence in the results. The existing direct interconnect regime at present efficiently manages billing, invoicing and reconciliations and are verifiable by both the NCA and GRA.</p> <p>The existing direct interconnect regime should be maintained as required by law.</p>



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Chapter Number	Section Number	Heading	Comment	Suggestion/ Proposed Amendments
	1.3	Market Overview	<p>Operator-to-operator interconnect (also known as peer-to-peer interconnect) is a basic requirement and well within the core competence of any qualified telecom operator. Hence with reference to Figure 3 (illustration of the peer-to-peer interconnection links of telcos in Accra) and the associated discussion, it is not correct to state that peer-to-peer interconnect is complex to manage. Current network operators have effective peer-to-peer interconnect links, and new entrants have the basic competence required for peer-to-peer interconnection.</p> <p>Furthermore, peer-to-peer interconnect reduces the risk of disruption because it affects only the connection between two operators, and where redundancy exists in that connection it may impact only quality of service during the period of the disruption.</p> <p>The ICH proposal, even with its envisioned two locations creates an unacceptable risk to all inter-network traffic in Ghana. There is no benefit to this proposal that justifies this risk. The resilience that will be required to guarantee reliability for consumers cannot be built according to this proposal. <u>National security and government revenue will inevitably be compromised.</u></p>	The existing direct interconnect regime should be maintained as required by law.



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Chapter Number	Section Number	Heading	Comment	Suggestion/ Proposed Amendments
1.4	1.4.1	Inefficient interconnect scheme	NCA's assertion that the current interconnect scheme is complex and inefficient is incorrect. Re-routing to accommodate a single link failure is automatic and immediate. Furthermore, said failures affect only the traffic between two specific operators, not all traffic between all operators as would be the case with an ICH.	The existing direct interconnect regime is required by law and should be maintained
1.4	1.4.2.	Insufficient interconnection capacity	NCA has cited no examples for this assertion. Should the situation arise, operators can be required to expand capacity because Operators plan and implement capacity expansion based on traffic growth forecasts.. NCA abandoned the Interconnect Technical Working Group, which managed this process successfully for many years.	The existing direct interconnect regime is required by law and should be maintained



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Chapter Number	Section Number	Heading	Comment	Suggestion/ Proposed Amendments
1.4	1.4.3	Interoperability of multiple equipment types	<p>NCA's incompatibility claim is entirely incorrect. Operators with different technologies are interconnected successfully today.</p> <p>Network Interoperability has never been a challenge as operators work with ITU-T guidelines for interconnectivity. Introducing an ICH does not mean that all operators will use the same vendor.</p> <p>With respect to the MMS "issue" cited by NCA, there are no technical barriers to interconnect, but it is not clear that there is demand or commercial imperative giving the rise in OTT services such as WhatsApp</p>	The existing direct interconnect regime is required by law and should be maintained
1.4	1.4.4	Inability to reconcile call data records	<p>The current interconnect guidelines include clear and specific dispute resolution procedures which are working well. We are unaware of any CDR reconciliation dispute in recent memory which required NCA intervention. Adding a third party to the process complicates rather than simplifies.</p> <p>Interconnect debt problems are driven by an operator's inability to pay at all. This is not resolved with the ICH proposal.</p>	The existing direct interconnect regime is required by law and should be maintained



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Chapter Number	Section Number	Heading	Comment	Suggestion/ Proposed Amendments
1.4	1.4.5	Anti-competition Practices	<p>NCA already has broad powers to regulate competition and prohibit anti-competitive behavior. It is a sign of the industry's adherence to good regulatory practices under the oversight of the NCA that, to our knowledge, the NCA has not been called upon to regulate anti-competitive behavior in respect of interconnection. It therefore comes as a matter of extreme amazement to us that the NCA makes the assertion that "anti-competition tendencies by operators are rampant" under the current peer-to-peer interconnect scheme.</p> <p>The phenomenon of international calls being presented as local calls (referred to by the industry as SIMBoxing), is not perpetrated by legitimate Operators, but by unscrupulous entities who take advantage of gaps of the arbitrage created by the high mandatory international termination rates. Both operators and Government lose money to these unscrupulous entities, while customer experience is impacted negatively.</p>	<p>The existing direct interconnect regime is required by law and should be maintained</p> <p>Government should remove the mandatory international termination rate.</p>



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Chapter Number	Section Number	Heading	Comment	Suggestion/ Proposed Amendments
2		The Rationale and Objectives for a Clearing house License in Ghana	<p>This section requires factual proof associated with the current interconnect regime. Accordingly, the ICH benefits it claims are tenuous and no data is provided in their support.</p> <p>Furthermore, figure 4 conceals the true complexity and risk that the ICH proposal sets forth.</p> <p>The issues mentioned by NCA, such as stolen phones and uncertain subscriber identity are completely unrelated to the core functions of an ICH. Giving these functions to NCA's chosen licensee is a clear and present danger to everyone's privacy and safety.</p>	The existing direct interconnect regime is required by law and should be maintained and no additional functions should be assigned to an ICH.



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Chapter Number	Section Number	Heading	Comment	Suggestion/ Proposed Amendments
2		Optimization of number of Interconnect links	<p>The formula provided by NCA for calculation of interconnect link in any Point of Interconnection (POI) Area is inaccurate.. The correct formula, where N represents the number of operators to be interconnected is $(N*(N-1))/2$, and not $N \times (N-1)$ as stated by the NCA. Using the correct formula would yield 45 bilateral paths in a city with 10 operators, not 90 as claimed by NCA.</p> <p>No comparison is shown of current interconnect technical cost versus that which will be borne under the ICH proposal. It therefore has no basis to make a claim of cost savings.</p> <p>Furthermore, the number of links that will be required for the ICH is understated, given that redundant links will be needed from each operator (to both ICH locations) for each category of traffic.</p> <p>As operators are no longer using microwaves for interconnect, the contention that microwave frequencies will be released is unfounded.</p>	The existing direct interconnect regime is required by law and should be maintained



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2		Simplicity in Digit analysis/ Route Selection	All operators will continue to do their own digit analysis. Even with an ICH, they must determine for all traffic whether a number belongs to another network and to know how much to bill their own customers. The ICH, contrary to NCA's assertion, adds another step of digit analysis which will slow call completion times and reduce quality of service which will impact subscribers negatively.	The existing direct interconnect regime as required by law should be maintained.
		Simplicity of Operation	Nothing will be simplified for the operators NCA makes reference to inter-circle calls, which do not exist in Ghana.	
		Simple, cost-effective and reliable POIs	The proposal understates the simplicity of capacity planning using the ICH. This is a process, which is already well in hand under the current system.	The existing direct interconnect regime as required by law should be maintained.



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		Efficient handling of new and traditional interconnects	There is no new type of interconnect or protocol conversion that cannot be handled as well or better by the operators as it would by an ICH. All that is required is a commercial justification or a regulatory mandate and any new entrant will be interconnected. There is no data for their assertion in the proposal	The existing direct interconnect regime as required by law should be maintained.
		Better utilization of interconnect links	NCA has no basis for this assertion and no data to support this.	The existing direct interconnect regime as required by law should be maintained.
		Billing and Mediation services	There can be no confidence that data from an ICH would be any more accurate or should be considered any more authoritative than the direct bilateral process currently in effect.	The existing direct interconnect regime as required by law should be maintained. Operators who do not have the resources to deploy robust systems should not be licensed.



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Chapter Number	Section Number	Heading	Comment	Suggestion/ Proposed Amendments
		Developing Third Party Mobile Value Added Services	<p>NCA already has the authority to investigate and remedy any commercial arrangements between mobile operators and VAS providers which may be anti-competitive or discriminatory, but it has not done so. Instead with this proposal it seeks to divert revenue from the operators and VAS providers, and ultimately the public, to the selected ICH licensee rather than focusing on Government's revenue assurance.</p> <p>Contrary to the NCA's assertion that content providers would have a single point of connection, there are already mobile service aggregators directly connected to operators.</p>	
		Prevention of Capital flight and Revenue Loss to Government	<p>If content is obtained from outside the country it comes through the internet. No interconnect exchanges are involved. We fail to see any capital flight and loss of revenue to government as the proposal states.</p>	



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Chapter Number	Section Number	Heading	Comment	Suggestion/ Proposed Amendments
		Local Content	A modest local aggregator could serve the same function for local content promotion as NCA asserts ICH should do. In fact, there are Ghanaian companies already doing this, and NCA's proposal would damage their business prospects by virtue of the ICH's monopoly	
		Common Platform in accordance with Act 864	Nothing in that Act envisions or requires the routing of traffic through a separate entity to facilitate monitoring. None of the benefits in the list of bullet points in this proposal are supported by any data whatsoever.	
3	3.2	The Scope of the License	We restate that nothing in Act 864 envisions or requires the routing of traffic through a separate entity to facilitate monitoring.	



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3	3.2 (1)	The Scope of the License	Although Act 864 requires that access be provided to a node in networks where CDRs can be monitored, there is an inherent conflict of interest in assigning that duty to an ICH, which is responsible for the completion of calls and other traffic and is, in effect, a pseudo-operator. An ICH licensee should not have any higher stature than other licensees.	Monitoring traffic volumes shall not be a responsibility of the ICH.
	3.2 (2) 3.2 (3) 3.2 (4) 3.2 (5)	The Scope of the License	Mandating the use of an ICH for interconnect between operators is not supported by any law. The benefits cited by NCA are hypothetical and utterly unsupported by data.	The existing direct interconnect regime as required by law should be maintained.
	3.2 (6)	The Scope of the License	Hosting Over-The-Top (OTT) services is irrelevant to the function of an ICH, as the connection to operators flows through the internet. NCA proposal would have the effect of diverting business from local ISPs and hosting companies whilst providing no benefit to the public or OTT developers.	



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Chapter Number	Section Number	Heading	Comment	Suggestion/ Proposed Amendments
3	3.2 (7)	The Scope of the License	NCA does not describe what it means by “International Mobile Subscriber Identity services” IMSI is communicated between a customer’s SIM and the mobile switch. There is no means for an ICH to authenticate the IMSI nor is there any role for an ICH in the authentication process.	Delete, no relevance
3	3.2 (8)	The Scope of the License	There is no benefit to combining EIR services with the ICH. In fact, each GSM operator has its own EIR and all that is necessary is the sharing of white/grey/blacklist data with the central registry posted by the GSM Association.	Delete, no relevance
3	3.2 (9)	The Scope of the License	The duplication of fraud management and revenue assurance systems, which are already in place at the operators, is an unnecessary expense, which would be borne by the public.	
3	3.2 (11)	The Scope of the License	It should be noted that both the originating operator and the ICH will have to route calls according to the MNP database which doubles the likelihood of routing errors.	



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3	3.2 (12)	The Scope of the License	We do not see a role for ICH in the clearing or transiting of customer financial transactions, and we strenuously object to their having access to this data.	Delete
3	3.2 (14)	The Scope of the License	There is no law supporting sending any data packets to ICH	Delete
ANNEX D	(1)	Implementation Timetable	The selection of a 10 business day response time, the publication of these documents solely on the NCA website and the lack of any communication with stakeholders demonstrates that no serious consultation with stakeholders or the public can be achieved.	Extend response period to three months and ensure that notice has been published in two newspapers with national circulation.
	(2)	Implementation Timetable	The selection of a 5-business day period for review of all comments will be inadequate for a thorough review of the inputs and comments that would be submitted by stakeholders.	