

**DRAFT**

**A Public Consultation Document**

**on**

**The Proposed Guidelines for Rights-of-Way and Co-  
location for Outside Plant  
in the Kingdom of Saudi Arabia**

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## Attachments

1. ROW Guidelines
2. Co-location Guidelines

## 1 Introduction

The Communications and Information Technology Commission (CITC) is empowered by its Statutes to regulate the Information and Communications Technology (ICT) sector in the Kingdom of Saudi Arabia (KSA). The ICT sector is undergoing a dynamic transformation from public to private. The privatization program has a number of objectives, including increasing the effectiveness and competitiveness of the national economy through liberalization of the services market and opening sectors for fair competition. Licenses have been and will be issued by CITC for mobile, data and other services.

Rights-of-Way (ROW) is a scarce resource and a key factor in the telecommunications market liberalization strategy of the KSA. Competition is regarded as a major driver to meet the objectives stipulated in Art. 3 of the Telecommunications Act (Act). ROW is necessary for Service Providers to be able to establish independent telecommunications infrastructures. If ROW is not available, it is important that alternatives be at hand. Such alternatives enable Service Providers to access existing infrastructure needed to construct their networks. In the CITC Regulatory Framework for Fixed and Mobile Licensing, CITC stipulated that its regulatory framework, licensing terms and conditions, and requirements for license applications are intended to promote investment in building network infrastructure. This will provide increased bandwidth, especially in the access networks. CITC has also set the policy goal to increase coverage of ICT services and penetration of broadband services offered to end users in the KSA.

A major reason for the relatively low broadband penetration is the average length of copper access lines, which limits the capability to offer high bandwidths. In order to overcome this situation, it will be necessary to install more fiber in the access networks. Furthermore, as demand for capacity and traffic increases in the access network, the capacity in the backbone will also need to be built up. Thus, ROW will be needed.

To achieve the objectives mentioned above, it is important to detail the rules, conditions and procedures for ROW and for co-location in the outside plant (OSP) infrastructure and to provide an overall framework for the establishment of networks which give Service Providers clarity to assist them in their investment strategies.

The scope of CITC's efforts is to issue Guidelines based on international best practices to optimize the utilization of scarce resources and to assist current and future Service Providers to obtain ROW from the concerned authorities to be able to deploy their network infrastructure (cables, ducts, masts on public ground and similar equipment) along intra-city and inter-city streets, roads and highways. Additionally, the Guidelines shall serve to provide alternatives, such as co-location, in case the exploitation of the ROW is limited or not possible.

## **2 Comments Invited**

CITC hereby seeks comments from interested parties on the proposed Guidelines outlined in this Public Consultation. CITC invites all interested parties to submit written comments on any issue they believe relevant regarding the Guidelines. The comments of interested parties will be taken into consideration, but CITC is under no obligation to adopt them.

CITC particularly encourages parties directly affected by the Guidelines to allocate the necessary resources and time to provide detailed comments, supported by appropriate justifications, to the issues raised in this Public Consultation document. These comments will be taken into account in shaping the final Guidelines.

CITC welcomes written comments delivered in both Arabic and English; however, comments in either language will suffice.

### **3 Form of Response, Schedule and Procedures**

In providing their comments, interested parties are requested to specify contact details including the name of the party, address(es), phone number(s) and e-mail address(es).

Parties providing comments are kindly requested to use the template provided in Appendix A at the end of this document and to clearly indicate the title and section or paragraph of the document to which the comments refer.

All comments must be submitted to CITC no later than 18/10/1429H, corresponding to 18/10/2008G, to one or more of the following addresses:

1. E-mail to: ROW@citc.gov.sa
2. Delivery by hand or by courier of a hard and soft copy to:  
Deputy Governor for Technical Affairs  
Communications and Information Technology Commission  
King Fahad Road  
P.O.Box 75606  
Riyadh 11588  
Kingdom of Saudi Arabia

## **4 General Considerations**

### **4.1 The Current Situation in the KSA**

Fixed network penetration in the KSA is lower than in other countries, such as in Western Europe, North America and Asia, with advanced competition, if measured by the number of access lines as a percentage of population. Internet penetration (26 % at the end of 2007) and usage is lagging substantially behind in the KSA compared to these other countries. The licensing of new fixed Service Providers is intended to increase the uptake of internet services in the KSA.

The bandwidths offered in the KSA for internet access at both the retail and wholesale levels are relatively low. A major reason is the relatively long local loops in the existing networks. This reduces the available speeds and limits the deployment of the Internet.

Currently, access and backbone network infrastructures are in a phase of extension in the KSA. The incumbent is upgrading its access and backbone network which is considered to be the largest in terms of geographical coverage and offered services. Three licensed Service Providers are cooperating to establish the Saudi National Fiber Network (SNFN) as well as metro rings. The Service Providers who went through the licensing process in 2007 have specific rollout obligations by which they have to ensure a defined geographic coverage within specified time frames.

To establish the networks described above, as well as prospective additional networks in the future, it will be necessary to lay and establish physical infrastructure (cables, ducts, handholes, cabinets or similar equipment) in and on the public ground. Such infrastructure can also be made available by Service Providers with existing installations to others as "wholesale access products" via co-location. Or, it can be established in parallel by jointly constructing networks instead of exploiting ROW individually. The exploitation of ROW, joint construction, and co-location are interrelated.

Establishing networks, and using the public ground for this purpose, is a right of Service Providers. However, if the scarce ROW resource is not available, it is important to have alternatives such as joint construction and co-location. While an abstract ROW is granted by the Act, each Service Provider must obtain specific permits issued by the local municipality to be able to perform civil works on public ground. However, multiple digging of the streets by different Service Providers at different times has a negative impact on the use of ROW resources. It disturbs the public and may degrade the quality of the public infrastructure.

Resulting difficulties in obtaining civil works permits may imply that Service Providers will face difficulties in executing their planned network rollout in certain geographic areas in an economically efficient manner. To enable Service Providers to build their networks quickly and efficiently, as well as to optimize the exploitation of the scarce ROW resource, joint

construction and co-location must be promoted. This includes the obligation to plan and build spare capacity to be used by other Service Providers.

## 4.2 Study and Analysis of International Benchmarks

CITC has investigated the likely future development of network growth and capacity needs in order to have an indication about future infrastructure requirements. The analysis showed that the current copper network will not be sufficient to serve future capacity needs.

For the development of the Guidelines, CITC conducted several reviews and studies, the major results being summarized as follows:

- Fiber optic cable transmission is currently the best suitable technology to deal with the upcoming bandwidth demand. Fiber cable technologies already have a substantial bandwidth growth projection by using Dense Wave Division Multiplex (DWDM). Consequently, it is desirable that Service Providers having ROW have, in the backbone network and metrorings, the ability to install fiber optic cables (with at least 96 fibers).
- For access networks, the analysis covered radio technologies such as Wireless Local Area Network (WLAN), Worldwide Interoperability for Microwave Access (WiMAX), and Universal Mobile Telecommunications System (UMTS) upgrades High Speed DownLink Packet Access (HSDPA), High Speed UpLink Packet Access (HSUPA), and High Speed Orthogonal Frequency Division Multiplex Packet Access (HSOPA). Radio access systems suffer from the fact that they are shared media which cannot serve the simultaneous capacity requests of a large number of customers in densely populated areas. They might be considered for rural and remote areas, or as a supplement for urban areas. The analysis shows that in order to have a future-proof infrastructure which covers the anticipated long-term growth in bandwidth demand, it will be necessary to install a fiber-based access network for all customer groups. The access networks should be ducted with spare capacity left for future expansion. For new Service Providers, the investor will have to decide between the options of direct investment in a fiber-based access network or of using parts of other networks (ducts, sites) to speed up their own network rollout without infringing on their license obligations.

International benchmarks give insight on the way regulation of ROW and co-location is conducted in other countries. Therefore, CITC conducted a benchmark study to assess whether the issues being considered in the KSA have appeared in other countries and, if so, how solutions have been developed. The benchmarks showed that regulation of ROW, joint construction, and co-location is interrelated and often addressed in a common framework. The analysis also covered an international comparison of the rules for joint construction of infrastructure and co-location. A total of 13 countries (the KSA, Australia,

Austria, Canada, Egypt, France, Germany, Jordan, Morocco, Turkey, United Arab Emirates, the United Kingdom and the United States of America) were covered.

The main findings are as follows:

- The benchmarked jurisdictions show a somewhat differentiated picture regarding the legal provisions about which role is assigned to different authorities involved with ROW and co-location. Although organizational and procedural issues vary from one country to another according to their individual rules, regulatory authorities normally are assigned those issues related to telecommunications.
- The situation with respect to fees is very differentiated and has a large number of facets. Fees in the benchmarked countries can have different forms. They are normally payments either for (1) administrative actions, or (2) land use. Payments for land use can either be one-time or recurring.

Only the UK charges fees for granting an abstract ROW, whereas fees for administrative actions to grant civil works permits are not uncommon. Fees for land use exist but are used only in a minority of the benchmarked countries. Recurring payments for the use of public land are rare. In the few countries which have implemented recurring payments, the system of charging a specific amount per meter seems to prevail.

- In those countries where a single and uniform approach to the granting of civil works permits exists, with identical application procedures and identical application of rules by all authorities, the process is relatively fast and practical. Online availability of documentation, as well as online applications, also improve the service quality of the permit process.
- A one-stop-shopping concept with a lead authority may additionally decrease the complexity of applications for contractors to obtain civil works permits and non-objection certificates. This lead authority may also collect and make available information about current use of ROW.
- Regulation in most countries focuses mainly on bottleneck facilities. Therefore, countries often include additional supporting regulations if ROW is not available or not exploitable.
- For the concepts of sharing infrastructure and co-location, the main procedural rules, implementation and services in the 13 countries were analyzed. It was found that site sharing, especially in the mobile markets, is a generally accepted concept. Access to ducts has been regulated in a majority of the countries. There is an increasing trend to require Service Providers to supply reference offers for co-location in their OSP installations, e.g. in the form of duct sharing.

### **4.3 The Proposed Procedure**

In light of the best practices analysis, CITC plans to mandate co-location (including sharing) for OSP installations. This includes rules on space and capacity reservation for new



Service Providers, ensuring equal competitive opportunities for all Service Providers. Proven practices applied in other countries are based on the following principles:

- (1) one-stop-shopping at one authority for permit applications;
- (2) online access to applications and related documentation;
- (3) use of uniform documentation requirements for filings across different authorities countrywide;
- (4) definition of a maximum time for response to applications by the relevant authorities;
- (5) coordination meetings among Service Providers to exchange information about planned rollouts and possible co-use of infrastructure; and
- (6) online information about planned construction works, with restricted access to ensure its security.

## 5 Definitions

- 5.1 **"Access"** is a generic concept covering any situation where one party is granted the right to use the telecommunications network or telecommunications facilities of another party, on either an exclusive or shared basis.
- 5.2 **"CITC"** or **"Commission"** means the Communications and Information Technology Commission.
- 5.3 **"CITC Statutes"** means the Telecom Act, the CITC Ordinance, the Bylaw, the Rules of Procedure, any other Bylaw adopted under the Act, or any other legal instrument that is enforceable by the Commission, as amended from time to time.
- 5.4 **"Civil works permit"** means a document issued by the municipality or any other responsible authority which allows a Service Provider to conduct a specific construction project. This activity may involve the use of public land including cutting streets, excavating, establishing telecommunications infrastructure in the ground and re-establishing the original conditions. Such permits may include specific obligations to be fulfilled by the Service Provider.
- 5.5 **"Co-location"** means access of one Service Provider to locate and operate its telecommunications transmission systems and related equipment in already established sites, infrastructure or facilities of another Service Provider. This can take place at any technically feasible point (such as sites, manholes, handholes, street cabinets, trenches, ducts, vaults, poles, masts on public ground, or any other telecommunications facilities).
- 5.6 **"Co-location Guidelines"** means the Co-location for Outside Plant (OSP) Guidelines.
- 5.7 **"Corridor"** means a part of the public land which is specifically foreseen for the installation and establishment of physical infrastructure of a specific type of utility (e.g. telecommunications, sewer, power).
- 5.8 **"Dominant Service Provider"** means a Service Provider which has been designated as dominant in the relevant market by CITC.
- 5.9 **"Duct"** means an infrastructure (such as conduits or pipes) that encloses underground telecommunications cables to protect them from direct contact with the soil. Ducts can be divided into sub-ducts.
- 5.10 **"Handhole"** means a box for access to cables installed along the ducts.
- 5.11 **"Joint construction"** means the joint building and establishment of telecommunications transmission systems and related equipment in parallel.
- 5.12 **"KSA"** or **"Kingdom"** means the Kingdom of Saudi Arabia.

- 5.13 **"Manhole"** means an opening to an underground telecommunications infrastructure used to house an access point for making connections or performing maintenance on underground infrastructure. It is protected by a manhole cover to prevent accidental or unauthorized access to the manhole.
- 5.14 **"MOMRA"** means the Ministry of Municipal and Rural Affairs.
- 5.15 **"Network"** means a system used for provision of terrestrial telecommunications services and associated equipment.
- 5.16 **"Other Utility Installations"** means installations used to maintain public ways, drains, water and gas lines, oil pipelines, tracks, electrical installations, and other utility services.
- 5.17 **"Rights-of-Way"** (ROW) means (1) the granting of the right to use land for the installation, construction, establishment and operation of telecommunications infrastructure, and (2) the subsequent authorizations necessary to exploit the ROW, such as civil works permits.
- 5.18 **"ROW Guidelines"** means the CITC Guidelines for Rights-of-Way (ROW).
- 5.19 **"Service Provider"** means a facilities-based provider licensed by CITC.
- 5.20 **"Shared Trench"** means a single trench to accommodate two or more underground telecommunications facilities of at least two separate Service Providers.
- 5.21 **"Sharing"** means the joint use of land, specific infrastructure, and/or facilities by several parties. It can cover existing land, infrastructure or facilities and also refer to such facilities and infrastructure which are planned to be established together in the future.
- 5.22 **"Supporting infrastructure"** means handholes, manholes and other infrastructure elements. These elements are associated with Outside Plant (OSP) and are indispensable for the installation, removal, maintenance or repair of cables in ducts and sub-ducts.
- 5.23 **"Trench"** means an underground infrastructure into which several ducts can be installed. A trench is an occupied part of a corridor created for laying cables, ducts and other telecom materials.
- 5.24 **"Utility"** means a company building and operating networks including, but not limited to, telecommunications, power, gas and oil networks, as well as railroad tracks.

## 6 Guidelines for ROW and Co-location

CITC intends to issue effective Guidelines for ROW, including joint construction, and for co-location. The major aspects of these proposed Guidelines can be summarized below.

### 6.1 Rights-of-Way Guidelines

The proposed rules in these Guidelines are based on CITC's previous findings that there is an underinvestment in infrastructure, at least in the access networks in the KSA, and that the exploitation of the ROW can be limited. These findings have been confirmed by the analysis of future capacity needs. Therefore, the rollout of new infrastructure shall be promoted.

The goals to be achieved are:

- to set incentives to accelerate rollout of networks and services;
- to minimize public disturbance due to digging and laying of cables;
- the efficient use of the telecom corridor; and
- to establish an alternative to the exploitation of ROW.

To achieve these objectives, Service Providers must establish and utilize their infrastructure in an efficient manner. This means an efficient rollout of networks, including the possibility of joint activities for a parallel rollout of networks with other Service Providers ("joint construction"). The efficient utilization of the telecom corridor, which CITC encourages, is enabled by joint construction works, which are obligatory upon request by other Service Providers. This may come in the form of shared trenches to minimize or to avoid multiple construction projects by different Service Providers in the same location. Therefore, a coordination mechanism to exchange information among Service Providers shall be established. This will lower costs for network rollout for Service Providers who, working together, can achieve economies of scope in network rollout. It will also accelerate network rollout and minimize the disturbing effects on the public due to multiple construction activities. Coordination meetings will ensure that all necessary information and documentation is exchanged by the Service Providers to meet the abovementioned criteria.

All licensed Service Providers shall participate in periodic (at least quarterly) coordination meetings.

Licensed Service Providers shall size new ducts and associated infrastructures in which equipment is located taking into account the needs of other Service Providers, of which they have been informed during the coordination meetings (section 7 of the ROW Guidelines).

In the situation where a Service Provider fails to comply with the obligation to provide spare ducts and sub-ducts for later entrants, it shall be obliged to offer “dark fiber” as a wholesale product to requesting Service Providers.

## **6.2 Guidelines on Co-location for OSP Works**

Whereas the ROW Guidelines deal with the efficient use of the corridor and the mechanisms to speed up network rollout, the Co-location Guidelines cover access of one Service Provider to another Service Provider’s OSP network elements and the use of its OSP infrastructure. As the policy of CITC is to promote the rollout of new infrastructure, at least in the access networks, co-location is a solution when ROW is difficult to exploit. In such cases, co-location may be the only possibility to promote the rollout of networks. This has to be viewed in light of the ongoing liberalization process. New Service Providers are being licensed, and these Service Providers will have to roll out networks to be able to offer their services to consumers and to fulfill their license obligations regarding coverage.

In order to achieve the objectives of co-location, all licensed Service Providers shall allow access to their installed infrastructure, such as ducts, vaults, manholes and other associated and supporting infrastructure, to other licensed Service Providers. This includes only infrastructure which is their property or whose management is their responsibility. The Service Providers shall, upon request, provide clear information about locations in which co-location is possible and under which conditions (e.g. size, cooling/heating, power).

CITC will oblige the dominant Service Provider, and may oblige other Service Providers, to submit a Reference Offer for Co-location (ROC). The contents of the ROC are defined in the Co-location Guidelines.

## 7 Questions for Consultation

### 7.1 General Questions

1. How do you evaluate the general relationship between (1) the ROW Guidelines and (2) the Co-location Guidelines? Do they complement each other or is it sufficient to implement only one? Would you see any prioritization between the two?
2. In this context, how do you evaluate in general the proposed Guidelines which are part of this consultation: Are they clear and detailed enough? Will they improve the situation concerning the exploitation of the ROW and the rollout of networks?

### 7.2 Questions on ROW

1. How do you evaluate the procedures applied in the KSA to obtain ROW, including the civil works permits, in terms of:
  - information available;
  - the requested amount and detail of documentation to be filed;
  - the efficiency of the process;
  - the speediness of the process;
  - uniform application across different regions in the KSA?
2. Do you have any suggestions for changes to current procedures?
3. Do you have any proposed amendments to the proposed Guidelines in this consultation?
4. In your view, how does overall capacity growth and demand growth in the KSA affect the requirements for ROW?
5. Do the proposed Guidelines adequately address the necessary coordination with other Service Providers? If not, how should coordination take place among the different Service Providers regarding the use of public land?
6. How do you assess the proposed obligation for Service Providers to size new ducts and associated infrastructures in which equipment is located according to the needs for co-use of the infrastructure by other Service Providers? Is this a workable solution in your opinion?
7. The proposal foresees that Service Providers will coordinate with each other with regard to planned network rollout so that networks can be established in parallel ("joint construction"). Please assess the effects of this proposal (such as cost savings, coordination efforts, network security, time for completion, and similar factors) and provide your opinion.
8. Do you consider the concept of "coordination meetings" as a useful tool for making the ROW process more effective? What alternative solutions could be implemented?
9. Are the stipulations for the coordination meeting sufficient for the industry to be able to organize the necessary meetings (including the first meeting), the proc-

esses and all other arrangements needed to enable coordination for joint construction in an efficient manner?

10. What could Service Providers do other than the aforementioned proposals in terms of cooperation regarding network rollout in order to reduce multiple digging of streets and the disturbance of the public?
11. Are the provisions proposed for the sharing of trenches sufficient, clear and detailed enough to serve the purpose?
12. A key element in the framework proposal by CITC to ensure network rollout is to require Service Providers to leave a certain percentage of the internal area of any type of infrastructure empty. This spare capacity is to be reserved for future use by other Service Providers who cannot exploit their ROW in an efficient or reasonable manner. How do you assess such a proposal in terms of practicability and implementation? What alternatives do you consider feasible to achieve the same goal?

### **7.3 Questions on Co-location**

1. To what degree will co-location of OSP installations be necessary to ensure the provision of sufficient capacity in the KSA?
2. In your view, do the RIO and the RODA contain solutions which can be transferred from the Inside Plant to the Outside Plant?
3. How will co-location options impact incentives for Service Providers to invest in network rollout?
4. What are the pros and cons of obliging Service Providers to enable co-location with other licensed Service Providers? What options should be included (e.g. sharing of ducts and the installation of handholes in or at manholes by other Service Providers)?
5. Are the Co-location Guidelines sufficient, clear and detailed enough to serve the purpose? Do the Guidelines address all relevant matters? If not, what issues need to be addressed in your opinion?
6. Do you consider the proposed obligation for a dominant Service Provider to issue a Reference Offer for Co-location (ROC) as appropriate? If not, why and what other solutions would be possible to enable a similarly quick network rollout? If yes, should such a reference offer be required of the incumbent alone or also of other Service Providers?
7. Apart from the issues addressed in the proposed Guidelines, what other commercial issues are relevant for co-location?
8. Do you agree with the suggestions for the determination of the prices for co-location? If not, what methodology for calculating prices would you consider appropriate?
9. In your assessment, does the technology choice of Service Providers affect the possibilities to co-locate? If so, how?
10. Do you consider cost savings from co-location on one side, and the potentially lesser security and safety from co-location on the other side, a trade-off? Please

suggest measures which could help to achieve both goals (e.g. certain measures for the secure establishment of infrastructure such as disjoint ducts or dual parenting).

11. Which elements should be made available for co-location in your view? To what extent should the Guidelines be applied on:
  - (a) the copper network infrastructure; and
  - (b) optical fiber capacity?
12. Do you see the need to differentiate between the backbone and the access networks?



## 8 Appendix A

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