Islamic Republic of Afghanistan,

Ministry of Communications and Information Technology (MCIT)

Presentation by MCIT on Afghan Fiber Optic Ring

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Working Group on Knowledge-based Development

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- ✓ ROAD STATUS BETWEEN AFGHANISTAN AND CHINA THROUGH WAKHAN BORDER;
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OFC CONNECTIVITY OF AFGHANISTAN

- Under OFC Backbone Ring Project of Afghanistan [as funded by the Government under Core Development Budget of Afghanistan], **21** Provincial capitals have been connected and made operational for Broadband connectivity. These Provincial Capital cities/Provinces are as under:

Kabul; Jalalabad; Laghman; Logar; Paktia; Khost; Paktika; Ghazni; Maidan Wardak; Qalat; Kandahar; Lashkargah; Heraat; Maimana; Sheberghan; Mazaar-e-sharief; Aibak; Pulekhumri; Kundoz , Parwan and Takhar .

- Another 04 Provinces will be connected with the Backbone Network in 2015-16, under the World Bank fund: Bamiyan, Badakshan; Kapisa and Kunar;
- Afghanistan needs (USD 40 Million)funds to connect the remaining 09 Provinces: Farah; Panjsheer; Sarepul; Qalaienow; Zaranj; Daikundi; Chagcharan; Tarinkot and Nuristan.

OFC INTERNATIONAL CONNECTIVITY OF AFGHANISTAN.

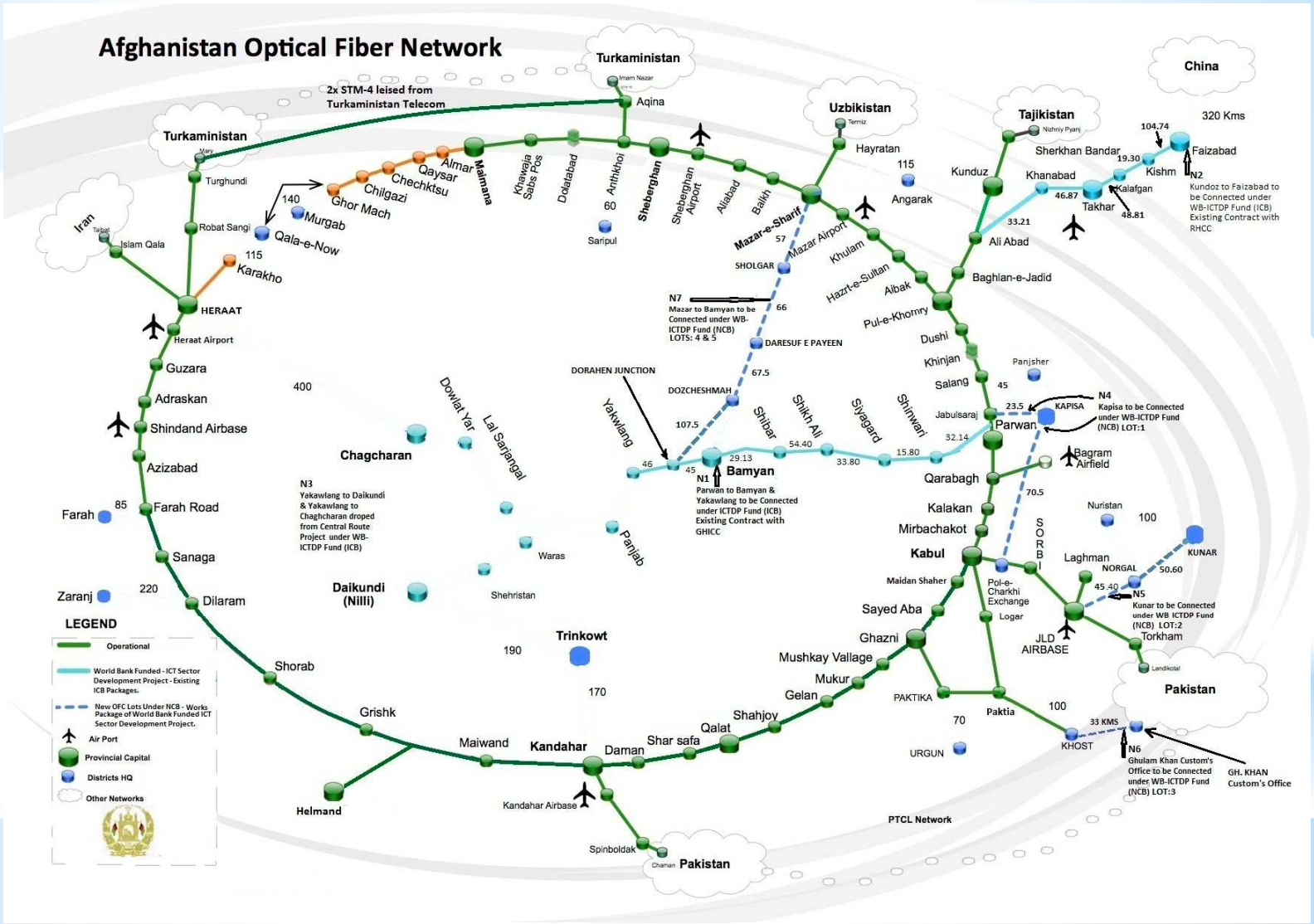
- International connectivity has been established with Pakistan at two points – Turkham and Spin Boldak; with Tajikistan at Sherkhan Bandar; with Uzbekistan at Hayratan; with Turkmenistan at Aqina and Turghundi and with Iran at Islam Qala.
- Due to Security Issues, Ring is not complete due to a Gap in Connectivity between Heraat and Maimana ; Once this Gap is covered, the Backbone will have better Reliability and Redundancy in routing of Traffic. For the moment ring has connected via Turkmenistan with capacity of 2 x STM-4 and will be upgrade to STM-64 .
- In addition, there is a great opportunity to connect China with Afghanistan through Wakhan Border, as shown in the enclosed Sketch. This is a 480 Kms of OFC Route required to be laid to connect Faizabad City of Badakshan Province with China Border. This connectivity could be established by China or any Donor or any Organization under PPP Model—Thus a great opportunity indeed. This corridor link-up will enable Afghanistan to become Economic Hub of the Region.

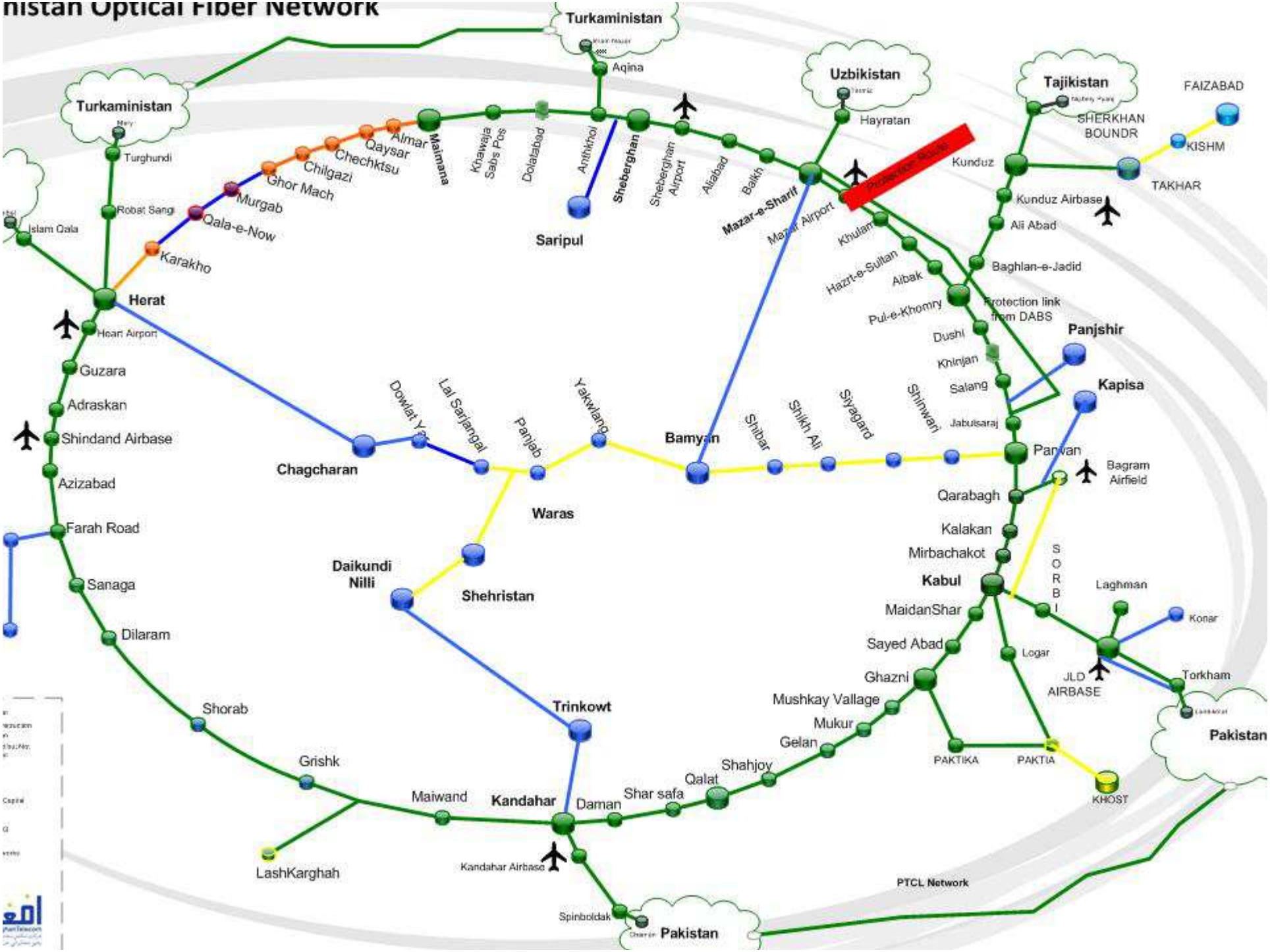
Road Status between Afghanistan and China through Wakhan Border

- **Distance between Faizabad City(Provincial Capital of Badakshan-Afghanistan) and China Border is 480 Kms and Faizabad is getting OFC Connectivity through World Bank funded Project of Afghanistan by August, 2015. Road Status is as under:-**

Sec. No:	From	To	Distance in Kms	Current Status of the Road
1	Faizabad	Baharak	44	Under Construction
2	Baharak	Ishkashim	109	Road Construction under Bidding Process
3	Ishkashim	Khondood	75	Gravel Road existing
4	Khondood	Broghel	135	Gravel Road existing
5	Broghel	China Border	117	Mountainous Track

AFGHANISTAN OPTICAL FIBER NETWORK MAP




nistan Optical Fiber Network
Turkaministan
Aqina
Uzbikistan
Hayratan
Tajikistan
SHERKHAN BOUNDR
FAIZABAD
KISHM
TAKHAR
Kunduz
Kunduz Airbase
Ali Abad
Baghlan-e-Jadid
Protection Route
Turkaministan
Turghundi
Robat Sangi
Islam Qala
Karakho
Qala-e-Now
Murgab
Ghor Mach
Chilgazi
Chechktsu
Qaysar
Almar
Maimana
Khawaja Sabs Pos
Dolatabad
Andkhoi
Sheberghan
Sheberghan Airport
Aliabad
Balkh
Mazar-e-Sharif
Mazar Airport
Saripul
Khulam
Hazrt-e-Sultan
Albak
Pul-e-Khomry
Protection link from DABS
Dushi
Khinjan
Salang
Panjshir
Kapisa
Jabulsaraj
Parwan
Bagram Airfield
Herat
Herat Airport
Guzara
Adraskan
Shindand Airbase
Azizabad
Farah Road
Sanaga
Dilaram
Chagcharan
Dowlat Yar
Lal Sarjangal
Panjab
Yakwlang
Bamyan
Shibar
Shikh Ali
Siyagard
Shinwari
Waras
Qarabagh
Kalakan
Mirbachakot
Kabul
Laghman
Konar
Torkham
JLD AIRBASE
MaidanShar
Sayed Abad
Logar
Ghazni
Mushkay Vallage
Mukur
Gelan
Shahjoy
Qalat
Shar safa
Daman
Kandahar
Maiwand
Grishk
Shorab
Daikundi Nilli
Shehristan
Trinkowt
LashKarghah
Kandahar Airbase
Spinboldak
Pakistan
PAKTIKA
PAKTIA
KHOST
Pakistan
PTCL Network
SORBI

SYSTEMS/EQUIPMENT INSTALLED FOR OFC RING BACKBONE NETWORK AND OTHER OFC NETWORKS ACROSS AFGHANISTAN

- Equipment installed to connect South-Eastern Provincial Capital Cities (Logar, Gardez, Sharan & Ghazni) is **OSN 3500** with STM-16 (2.5Gbps) capacity from Huawei-China;
- Equipment installed to connect all other Provincial Capital Cities is S390 with STM-64 (10Gbps) capacity from ZTE Corporation Ltd-China;
- Equipment installed to connect most of the Districts is S330 with STM-16 (2.5Gbps) capacity from ZTE Corporation Ltd.-China;
- Equipment installed for interconnection with Tajikistan at Sherkhan Bandar, Uzbekistan at Hayratan and Pakistan (Quetta) at Spin Boldak is S390 **& S385** with STM-16 (2.5Gbps) & STM-64 (10Gbps) capacity from ZTE Corporation Ltd.-China;
- DWDM **Equipment M920 +S385 with capacity of STM-64** (10Gbps) is installed to enhance the capacity between Kabul and Turkham (Border city connected with PTCL, Pakistan) with 40Gbps capacity from ZTE Corporation Ltd. –China.

OFC NETWORK BANDWIDTH ALLOCATION

[All the Systems on the Ring Route and the Systems connecting the neighboring Countries will be upgraded to NG-DWDM (10Gbps 40 channels in C band) with 50GHz spacing upgradable to 100 GB Capacities]

Interconnection Node Site of Afghanistan	Existing Network Bandwidth	Occupied Network Bandwidth
Turkham (Border City connected with Peshawar-Pakistan)	40G (DWDM) + 10G (SDH)	7*STM-16 + 1*STM-4
Sherkhan Bandar (Border City connected with Tajikistan)	STM-16 (2.5G)	3E1s
Hayratan (Border City connected with Uzbekistan)	2*STM-16	STM-16 + STM-1+ E1s
Aqina (Border City connected with Turkmenistan)	STM-16 (2.5G)	3*STM-4
Turkhundi (Border City connected with Turkmenistan)	STM-16 (2.5G)	2*STM-4
Islam Qala (Border City connected with Iran)	STM-16 (2.5G)	1*STM-4+ E1s
Spin Boldak (Border City connected with Quetta-Pakistan)	2*STM-64 (20G)	3*STM-16 2*STM-4 + E1s

ISSUES AND CHALLENGES.

- ✓ NEW ROAD CONSTRUCTION: INFRASTRUCTURE SHARING IS NOT CONSIDERED BY ROAD CONSTRUCTION DEPARTMENT (PROBLEM IN PARTICULAR WITH ADB FUNDED PROJECT).
- ✓ SECURITY ISSUES: SECURITY IS ONE OF THE MAIN OBSTACLE FOR IMPLEMENTING THE PROJECTS IN AFGHANISTAN AND CAUSE DELAY FOR THE PROJECT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THANK YOU!