Fibre-Ready Scheme
Updates to Building Owners

29 April 2016

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Agenda

- Introduction to Fibre Ready Scheme
- Deployment methods for installation of Air-Blown Fibres microducts
- List of Prices of commonly used materials
- Application & Letter of Offer
- IDA's Project Timeline
- IDA's Point of Contact
- Q & A

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Introduction to Fibre Ready Scheme

Overview

- To facilitate seamless installation of fibre broadband for enterprises, **Government has set aside $200m to prepare buildings for fibre infrastructure**

- Grant to Building Owners / Management Corporations for additional infrastructure costs (cable trays, access panels, etc.)

- FBOs remain responsible for installation and maintenance of fibre cables

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Benefits of Fibre Ready Scheme (FRS)

- Cost Saving
  - Reduces the cost of installing in-building infrastructure.
- One-time
  - Installation of in-building infrastructure with 100% deployment to all tenants.
- Faster
  - Subscription of fibre service now faster, with shorter waiting period & less delays.
- Convenience
  - Less disruptive works and riser / ceiling congestion.
- Safer Environment
  - No more height & fire-loading issues, night works and labour-intensive activities
- Ease of maintenance
  - Allows fast repairs & trouble-shooting with centralized containment system

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Eligibility

- For Building Owners / Management Corporations to qualify
  1. Applies to non-residential buildings only
  2. Buildings must be multi-tenanted i.e. 5 tenants and above
  3. No additional charges to tenants, fibre operators or consumers of fibre services when fibre services are taken up
  4. Infrastructure must be able to facilitate fibre services to 100% of tenants
  5. Must support RSP / Operator Marketing efforts, e.g. no charge to RSPs for roadshows within buildings

- The above is applicable for the next 3 years

Subsidy amount pegged at 90% of incurred cost, up to a max of $300,000 per building

Typical Deployment of Infrastructure

- Provision of new cable trays or metal trunking[1] from MDF room to telecom riser(s)[2] and into each tenanted unit
- Provision of access panels (600mm x 600mm)
- Provision of Air-Blown Fibre microducts from MDF room to all tenanted units

- [1] Only if existing cable trays or metal trunking are 90% utilised.
- [2] Where existing MDF room or telecom riser is congested, the owner may proposed other location, e.g. void space below staircase, ELV riser, etc.

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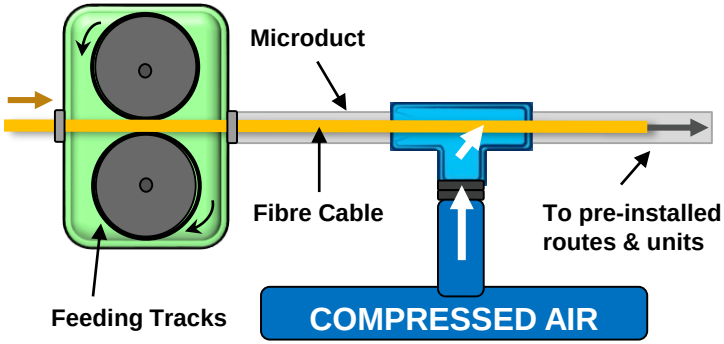
Deployment Methods for installation of Air-Blown Fibre microducts

FRS Deployment Methods using ABF system

What is Air Blown Fibre (ABF) ?

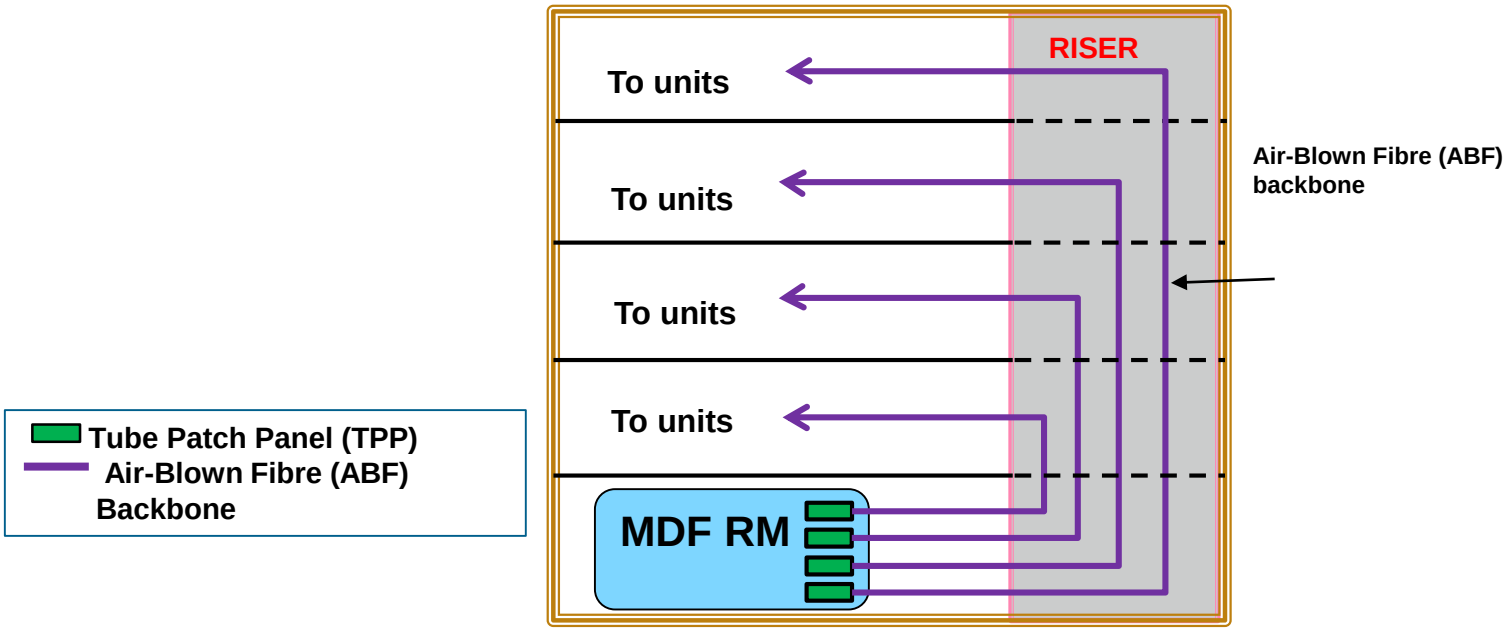
Air Blown Fibre (ABF) is a method of installing optical fibre by blowing fibre cables using compressed air through a fibre blowing machine.

Typical Fibre Blowing System



Two types of deployment are typically used: the Direct Method and Break-Point Method.

Option 1: Direct Method



What is it?

The **Direct Method** involves the deployment of ABF microducts directly from the Main Distribution Frame (**MDF**) room to the tenanted units through either the riser or within concealed areas along the common corridors. Service provisioning for this method can be carried out by blowing fibres directly from unit to MDF room or vice versa.

Option 1: Direct Method

PROS	CONS
Faster provisioning as fibres are blown direct from MDF room to units, without need to access risers. Building Owner only needs to provide access to MDF room	Higher installation costs than the **Break-point Method** (typically 10 to 30%) due to more materials used
Cleaner and more straight-forward record-keeping as Building Owner with only needs to maintain one set of records at **MDF** room.	Potential congestion at floor opening of riser, due to higher number of microducts required
Lower maintenance requirements due to fewer points of failure.	

Recommendation
The **Direct Method** is more suitable for **new buildings** and **small buildings** with fewer tenanted units on a single floor (e.g. < 30 units per floor, per riser) and where there are no congestion in the riser, i.e. either using existing floor opening or further coring is feasible with no other physical constraints.

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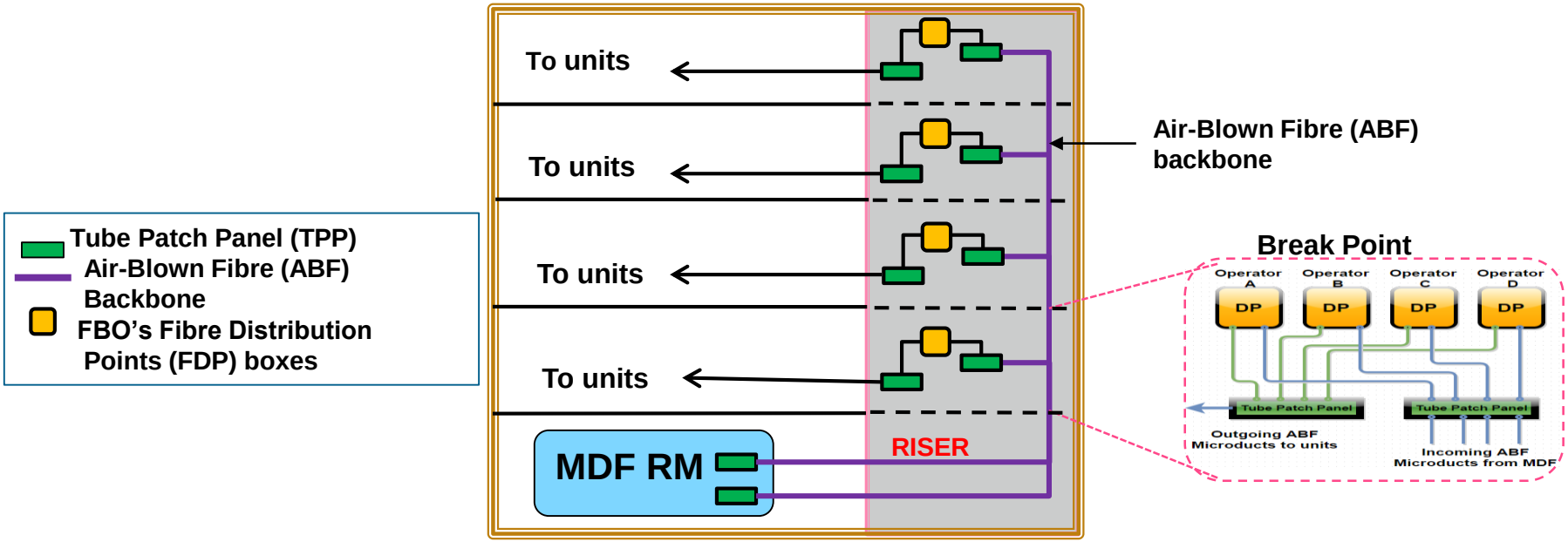
Option 2: Break-Point Method



What is it?

The **Break-Point Method** involves the deployment of ABF microducts from the MDF room to an intermediate connection point at the riser, before continuing with the installation of ABF microducts into the tenant's premises. For service provisioning under this method, fibres will need to be blown half-way to a connection point in the riser and then blown again from the riser to the end of the network.

Option 2: Break-Point Method

PROS	CONS
Fewer ABF microducts in the backbone helps to resolve cable congestion issues at the floor opening in riser.	Potential congestion in the riser when multiple FBO's Fibre Distribution Point (**FDP**) boxes are installed.
More cost-effective with approximately 10% to 30% savings over the **Direct Method**.	Building Owner will need to maintain multiple sets of records with more complex tracking of fibre/port allocation in riser and **MDF** Room.
	Potential service delays and disturbance to tenants due to need to access risers to carry out potentially noisy work such as drilling, fibre-blowing, splicing works.

Recommendation

Break-point Method is more suitable for **existing large buildings** with many tenanted units on a single floor (e.g. 30 to 60 units per floor, per riser), and where installation for the Direct Method is not feasible due to practical reasons such as congestion in the risers.

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Deployment Methods

- Building Owners to adopt the following design:
  - Direct method (from MDF room to tenant unit) for new or small buildings;
  - Break-point method, if > 30 tenant units and < 61 tenant units (per floor & per riser)
    - Where break-point method is selected, need to ensure that there are at least 50% of tubes based on direct method from MDF room to riser

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Notes to BOs & MCs

- FBOs have been reminded to seek BO / MC's approval before using the FRS infrastructure

- BOs & MCs need to remind the telecom operators not to modify the installed methods (*i.e. modifying break-point to direct or direct to break-point method*)

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List of Prices

List of Prices

- List of commonly installed materials as a guide for BOs
- Listed on FRS website
- Prices are based on existing projects
- Prices will be reviewed every 6 months or at IDA's discretion

List of Prices

S/N	Description	No of Projects[1]	50% Percentile unit rate ($) [2]	90% Percentile unit rate ($) [3]
1	Supply & installation of horizontal / vertical **100mm cable trays** with all accessories.	33	28.00	30.50
2	Supply & Installation of **C Clip** at 3m c/c interval from the soffit of a floor or on the wall mounted in order to support the ABF ducts	31	4.73	5.50
3	Supply & installation of **24 way ABF Microduct** (5mm/3.5mm) with all accessories. (Purple stripe)	40	18.35	19.00
4	Supply & installation of **2 way ABF Microduct** (5/3.5mm) with all accessories (Purple stripe)	38	10.41	11.00
5	Supply & Installation of **24 port TPP** (Tube Patch Panel) c/w bulkhead connectors on the rack at MDF room / Riser	46	95.00	102.00
6	Supply & Installation of **19" width, 610mm height**, 250mm depth floor mounted Tube Distribution Rack at MDF room / Riser room	39	483.10	500.00

Notes	
1	Number of projects using the described materials
2	50% of building owners paid this amount or less, and 50% paid more. This figure provides an estimate of the typical unit rates for building owner.
3	90% of building owners paid this amount or less, and 10% paid more. This figure provides an estimate of the upper range of unit rates.

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List of Prices

S/N	Description	No of projects[1]	50% Percentile unit rate ($) [2]	90% Percentile unit rate ($) [3]
7	Allowance for **coring of holes** through walls or risers and patch up with fire stop material after duct installation completed	43	180.00	360.00
8	Allowance for **drilling of holes** through walls for 2w Ducts to units	34	20.00	47.39
9	Preliminary cost for **conducting survey (building with 51 units onwards)**, allow for preparation of necessary documents such as technical proposal, designing of infrastructure network	34	3930.00	4200.00
10	Prepare **as-built drawing in BIM format (medium building from 51 to 150 units or more than 2km of ABF)**, necessary documents inclusive of photos and test reports upon successful completion of the infrastructure	34	5920.00	8285.00

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Application & Letter of Offer

Terms & Conditions (1/4)

- Building owner to submit the following (*with authorised signatures*)
  - Application Form
  - ACRA or SLA certifcate for MCST
  - Last 3 years audited financial statements
  - Contractor's technical proposal & costing
  - Tenant List

- Letter of Offer will be sent to the owner ~6 weeks provided the above are in order

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Terms & Conditions (2/4)

- Where grant exceeds $100k, owner needs to engage a certified public accountant to certify the claims

- For a period of 3 years from
  (a) the date of TOP; or
  (b) the expiry date of the Qualifying Period in the case of existing building

  - must be non-residential & multi-tenanted, having at least 5 tenants (non-subsidiaries related)
  - must be able to facilitate the provisioning of fibre services for 100% of the tenants
  - when more tenanted units are added after Qualifying Period, the Company must provide (the additional infrastructure) to these additional units, at the Company's cost

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Terms & Conditions (3/4)

- Not impose any additional charges on tenants, fibre operators, RSPs or other consumers of fibre services;
- Allow RSPs to carry out their marketing efforts w/o imposing charges on them:
  - Running promotional roadshows in public areas such as the atrium;
  - Placing promotional posters in public areas such as the lift lobby;
  - Distributing promotional brochures to the tenanted units; or
  - Providing any assistance the Building Owner may wish to offer to the RSPs.

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Terms & Conditions (4/4)

- Consent to the listing of its Building's name & contact details on IDA's website
- Ensure the contact details are up to date
- Ensure that all information of the infrastructure provided are recorded in the form of BIM drawings;
- Ensure that the BIM drawings & fibre assignment table are updated;
- Provide, at no charge, the updated BIM drawings to any fibre operators, who require them when they are providing services to tenants in the Building.

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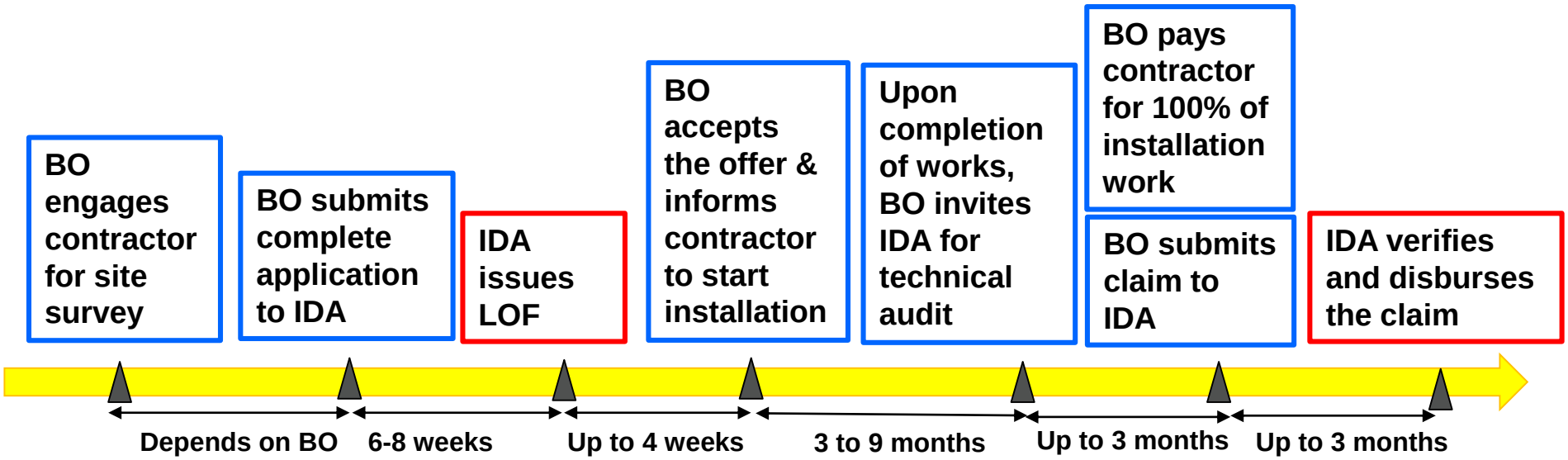
IDA's Project Timeline

Fibre Ready Scheme Project Timeline



- *BO has up to 4 weeks to accept the LOF*
- *Qualifying period of 3 to 9 months, which include the installation phase*

"Qualifying Period" means the period within which the Project shall be completed

- *Technical audit by IDA to be carried **within qualifying period***

- *Claim to be submitted by **end of qualifying period***

- *Where grant amount exceeds $100k, BO to engage certified public accountant to verify claim*

Legend:
BO – Building Owner
LOF – Letter of Offer
Action by BO
Action by IDA

IDA Point of Contact

Contact Details

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Q & A

Thank you