



Fibre-Ready Scheme Updates to FBOs & Contractors

9 December 2015

Agenda

- Introduction to Fibre Ready Scheme
- Deployment methods for installation of Air-Blown Fibres microducts
- Notes for FBOs & Contractors
- Submission by Building Owners
- IDA's Project Timeline
- Q & A

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

Benefits of Fibre Ready Scheme (FRS)

- Reduces the cost of installing in-building infrastructure
- One-time installation for the entire building reduces the need for ad-hoc installation work
- Facilitates access to fibre services in the building
- Allows all FBOs to make use of in-building infrastructure

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

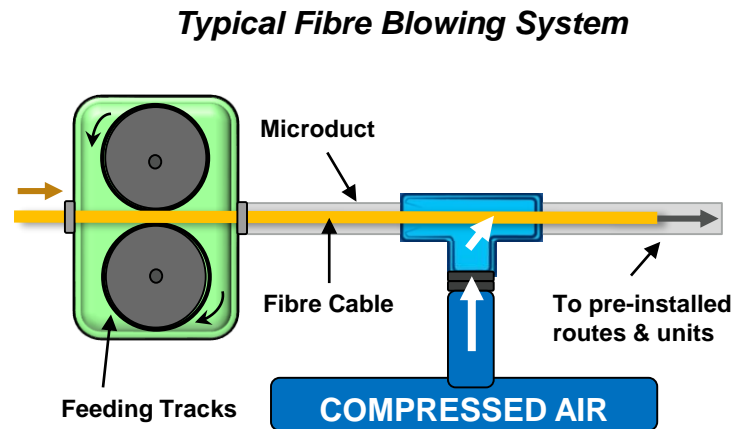
- Provision of new cable trays or metal trunking¹ from MDF room to telecom riser(s)² and into each tenanted unit
 - Provision of access panels (600mm x 600mm)
 - Provision of Air-Blown Fibre microducts from MDF room to all tenanted units
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- ¹ Only if 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.

Deployment Methods for installation of Air-Blown Fibre microducts

FRS Deployment Methods using ABF system

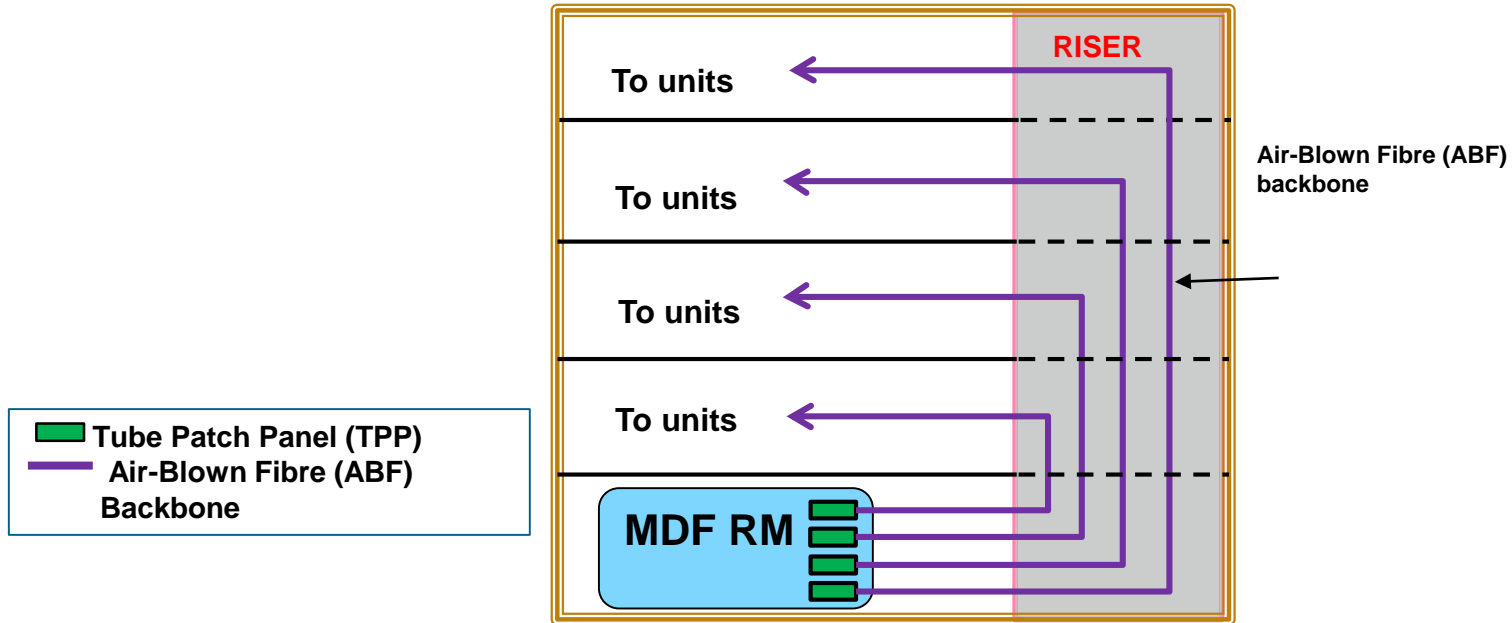
What is Air Blown Fibre (ABF) ?

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



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.

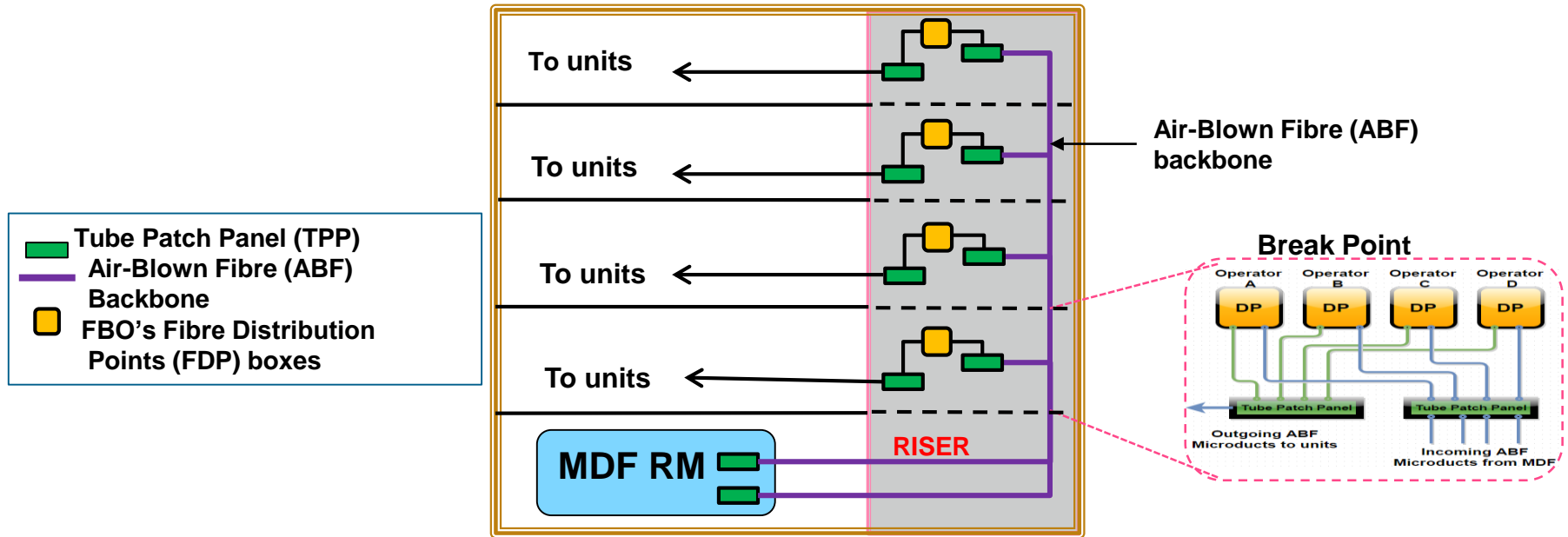
Option 1: Direct Method

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.

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.

Deployment Methods

- Contractors to highlight to the BOs both methods including the benefits & obligations
- Contractors 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, contractors to ensure:
 - At least 50% of tubes based on direct method from MDF room to riser
 - 2 TPPs to be provided (for MDF room to riser & riser to unit)

Deployment Methods (calculation examples)

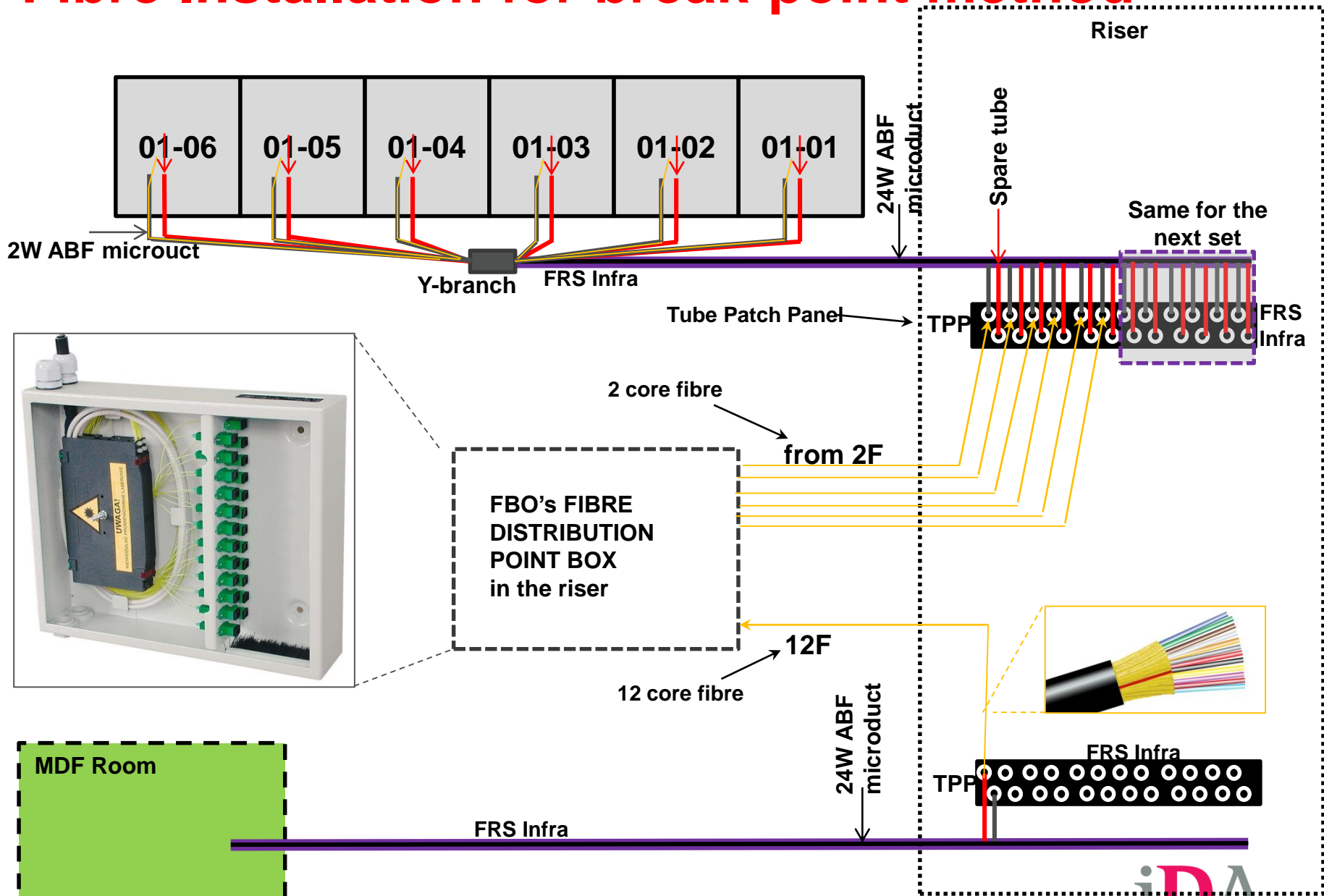
S/N	Building type	No. of tenanted units	No. of storeys	No of risers (per level)	No of units per level (Average)	Direct Method		Breakpoint Method			Remarks
						Nos of 1W ABF for Direct Method	Nos of 24W ABF at Main Link (A)	from MDF room to riser (main link)			
								50% of (A)	Per Flr / Riser		
								Whole Blg 24W ABF			
1	Light Ind Bldg	49	7	1	7	98	5	3	7	1	Direct
2	Light Ind Bldg	80	8	2	10	160	7	4	5	1	Direct
3	Light Ind Bldg	15	7	1	4	30	2	1	3	1	Direct
4	Shopping Mall	660	6	1	110	1,320	55	28	110	5	Breakpoint
5	Office Bldg	570	38	2	15	1,140	48	24	8	1	Breakpoint
6	Light Ind Bldg	630	9	2	70	1,260	53	27	35	2	Breakpoint
All figures are rounded up to next higher whole number											

Notes for FBOs & Contractors

Notes to FBOs & Contractors

- FBOs are reminded to seek BO's approval before using the FRS infrastructure
- FBOs are reminded not to modify the installed methods (*i.e. modifying break-point to direct or direct to break-point method*)

Fibre Installation for break-point method



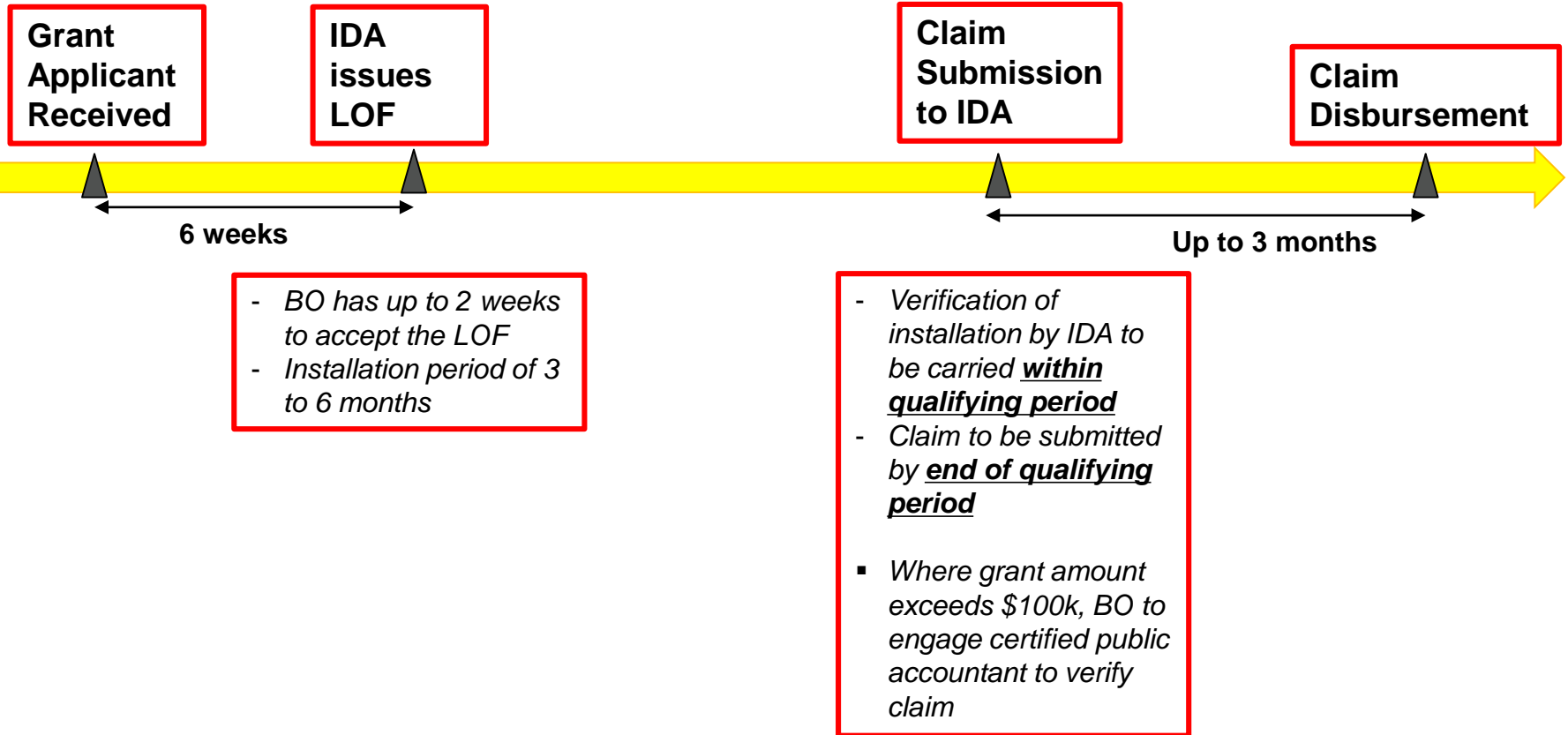
Submission by Building Owners

Points to Note

- Building owner to submit the following *(with authorised signatures)*
 - Application Form;
 - ACRA or SLA certificate 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 is in order.
- Where grant exceeds \$100k, owner needs to engage a certified public accountant to certify the claims

IDA's Project Timeline

IDA's Project Timeline



IDA Point of Contacts & Website

Contact Details

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Website

- FRS Website:
 - <https://www.ida.gov.sg/Tech-Scene-News/Infrastructure/Wired/Fibre-Ready-Scheme>
- Showing:
 - Application Form
 - List of Contractors
 - List of Buildings Completed
 - List of RSPs
 - Previous Briefing Slides

Q & A

Thank You