

AMI System Technical Proposal

1. Technical Proposal for Wireless AMI System
2. Documents Enclosed with the Technical Proposal

Total number of sheets of document (including drawings) in this item: XX sheet(s)

Technical Proposal for Wireless AMI System**Part I – General Information**

Address of Premises:	Immigration Tower, 7 Gloucester Road,
	Wan Chai, Hong Kong
Name of Applicant (in English) :	ABC Consultant Limited
(In Chinese) :	ABC有限公司
ASN/CCID No. (if applicable):	9876543210
WSD AMI Reference No. (if applicable):	301

To: Water Authority

I/We[#] will provide a wireless AMI system in the above premises. The proposal for the wireless AMI system installation is summarized as follows:

No. and Size of Water Meters Involved

Size	DN 15	DN 25	DN 40	DN 50*	DN 80*	DN 100*	DN 150*	DN 200*	DN 250*	DN 300*
No.	320	4			2	2				

* Pulse counter will be used

Please tick the appropriate box

The following items will be acquired through WSD@:

☒ Wireless MIUs ☒ Wireless Pulse Counters ☒ SIM Cards

@ Payment to WSD for relevant items shall be settled at least 6 months before collection of Meters.

The following items will be acquired on my own with prior approval from WSD:

☐ Wireless MIUs ☐ Wireless Pulse Counters ☐ SIM Cards

☐ Other: _____
(Please Specify)

Target Date of Collection of Meters from WSD: 2026-12-01
(Technical Proposal should be approved by the WSD beforehand)

Target Date of Effecting of Water Supply: 2027-06-01
(Wireless AMI System should be completed beforehand)

Submitted by:	Tai-man Chan	Company Name:	T&C Plumbers
Telephone No.:	3565 5348	Email Address:	tmc@mail.com
Date of Submission:			2025-12-01

delete as appropriate

Encl.

Part II – Documents Enclosed with the Technical Proposal

Please tick the appropriate box

Item of Document		Included in the Proposal	Not Applicable
<u>General</u>			
(1)	Preliminary Drawings/Layout Plans showing: (a) The site location and boundary of the development; and (b) Locations of water meters (e.g. common floor plan).	☒ ☒	☐ ☐
(2)	Initial signal coverage test report showing: (a) The signal strength measured at each location of water meter; and (b) The proposed remedial plan for poor signal coverage locations.	☒ ☒	☐ ☐
(3)	Supporting Documents including: (a) Copy of related Special Conditions in Land Lease with covering letter showing date of issuance of the Land Lease; (b) Appointment letter issued by the Developer to entrust the Works to the Contractor; and (c) AMI Outstation Design Change Request Form (for change of design from wired to wireless scheme); and (d) Form WWO1155 Request for Work to be Carried out by the Water Authority (if Wireless Water Meter Interfacing Device(s) are acquired through WSD).	☒ ☒ ☒ ☒	☐ ☐ ☐ ☐
(4)	Other information required by the Water Supplies Department (WSD). Please specify: _____	☐	☒
<u>Please fill in the following part if the Meter Interface Units (MIU) and/or Pulse Counters will be acquired on your own with prior approval from WSD</u>			
(5)	Design of the wireless water meter interfacing		

	device including: (a) General arrangement of the MIU assembled to the mechanical water meter in CAD files and drawings; (b) General arrangement of the pulse counter assembled to the ultrasonic/EM water meter (if any) in CAD files and drawings; (c) Brochure and technical schedule of the MIU and pulse counter (if any); (d) Brochure and technical schedule of the Field Configuration Tools; (e) Telegram of the MIU and pulse counter (if any); (f) Type test report to substantiate IP68 of the MIU and pulse counter; (g) Type test report to substantiate the electromagnetic interference level and emission limit in compliance with OFCA's requirements; and (h) Calculations to substantiate the lifespan of the battery.	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
(6)	Equipment Schedule including: (a) A list of MIUs and pulse counters for the wireless AMI system with brand, model no., product brochure, technical data sheet; (b) A list of special tools required for disassembly and reassembly of the MIUs and pulse counters; (c) A list of special tools for fixing MIU on water meter (if any); (d) A list of field configuration tools for the proposed MIUs and pulse counters; and (e) Method Statement for the routine and sample tests of the MIUs and pulse counters.	☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐

Drawing Schedule

Drawing No.	Drawing Title	Revision No.
XXXXXX	Site Location Plan	XX
XXXXXX to XXXXX	Floor Layout Plans	XX
XXXXXX	Schematic Diagram of Wireless AMI System Installation	XX

Drawing Checkpoints

Ref.	Checkpoint	Yes/No/NA
1	Drawings are in A3 size and provided with a proper title block showing the relevant information of the project as well as the drawing title, drawing no. and the AMI project number.	Yes
2	Drawings are complete, professional, clear, properly scaled and easily understood by operation and maintenance personnel.	Yes
3	Site location plan of the proposed premises comes with details of the surrounding area including named access roads and landmarks.	Yes
4	Floor layout plans show the floor elevation in mPD and locations of water meter rooms, fuse spur units, AMI equipment panel and Internet connection point.	Yes
5	All surface conduits are Class 4 hot dipped galvanized steel rigid conduits.	Yes
6	13A fused spur units are provided at water meter rooms and AMI equipment panel.	Yes
7	13A fused spur units are provided for water meters with size equal to or larger than 50mm and operated by mains supply.	Yes

Wireless Signal Coverage Test Form (Before/After* Meter Installation)		
AMI Project No.: 301		
Site Address:	Immigration Tower, 7 Gloucester Road, Wan Chai, Hong Kong	Test Date: 2025-11-01
Testing Instrument:		
Instrument	Make and Type	Serial No
RF Detector 5.2GHz	Siretta SNYPER-5G GRAPHYTE (GL)	123455

Note:

1. Location map and layout plan of the site should be attached to this form when submitted.
2. Each test point should be tested at least three times successively with minimum interval of 5 minutes.
3. Test should be conducted under real working conditions as far as practicable, e.g. access door of meter room in closed state.
4. If real-condition test cannot be carried out, e.g. building not ready, rough estimated signal strength losses should be allowed as follows:

Metal	Low-E and Tinted Glass	Concrete (6 inch)	Brick and Stone	Plaster	Wood	Clear Glass	Fibre-glass Insulation	Drywall
-50 dBm	-30 dBm	-15 dBm	-10 dBm	-10 dBm	-6 dBm	-4 dBm	-2 dBm	-2 dBm

Example: 4G signal at -70 dBm outside the building will pass through a glass pane, a brick wall and a wooden access door before reaching the smart meter. The resultant 4G signal strength at the meter position is $-70 \text{ dBm} + (-4-10-6) \text{ dBm} = -90 \text{ dBm}$.

Test Results

Network Operator (e.g. China Mobile)	Technology (e.g. LTE 4G)	Frequency Band (e.g. B8)	Physical Cell Identification (PCI) No.	In-building Signal Booster installed (Y/N)
CMHK	LTE 4G	B8	131	N
Reference Value	RSRP (dBm)			
LTE 4G	≥ -105			

Location Point	Floor (e.g. 40/F)	Time Stamp (e.g. 14:00)	RSRP (dBm)			Result (Pass-✓/Fail-✗)	SINR (dB)	Remark
			Measured	Estimated Signal strength Loss	Resultant			
1	B/F	14:00	-70	-30	-100	✓	0	Preliminary test for the most difficult meter location before substructure is built
1	B/F	14:05	-74	-30	-104	✓	3	
1	B/F	14:10	-72	-30	-102	✓	0	

Remedial Plan for Poor Signal Reception Locations

Nil.					
Tested by:	SM CHAN	Post: Engineer	Witnessed by:	Tai-man Chan	(Applicant's Representative)
Signature:	Signed		Signature:	Signed	
Company:	T&C Plumbers		Company:	T&C Plumbers	
Date:	2025-11-01		Date:	2025-11-01	

* delete as appropriate

AMI OUTSTATION DESIGN CHANGE REQUEST FORM

PROJECT DETAILS	AMI Project No.		Application Serial No.		Approval Date of Current Design	
	301		9876543210		2025-06-01	
	Site Address				Meters Collected: Yes /No*	
	Immigration Tower, 7 Gloucester Road, Wan Chai, Hong Kong				Estimated OP Date: 2027-06-01	
	Requested by (The Applicant or his Representative)		Date		Contact No.	Email Address
Mr. Tai-man Chan		2025-12-01		3565 5348	tmc@mail.com	
DESCRIPTION OF CHANGE		☐	We want to change the AMI Outstation design based on reference designs and WSD Standard Specification E-89-01 (Mar 2025) published by Water Supplies Department on 14/3/2025.			
		☒	We want to change the AMI Outstation design from wired metering scheme to wireless metering scheme.			
CHANGE IMPACTS	Scope	The scope of the plumbing proposal including the no. of water meters involved will remain the same.				Yes/ No *
	Deliverables	We will re-submit the design proposal for the AMI installation including drawings, materials, equipment and work programme for the approval of the Water Authority.				Yes/ No *
	Cost	We will absorb and bear all costs associated with the provision and abandonment of the AMI infrastructure already built but not to be used by the AMI Outstation under the new design.				Yes/ No *
	Timeline	We will extend/adjust our project timeline to account for the design change.				Yes/ No *
	Technical	For wireless metering scheme, we will ensure each smart meter installation location has adequate signal strength for data transmission between the smart meter and the backend server of the Water Authority.				Yes/ No *

REPLY FROM WATER AUTHORITY

To: The Applicant

- ☐ Your request for design change is noted. The Water Authority will not be responsible whatsoever for such change as requested. Please proceed with the submission of the new design proposal as soon as possible.
- ☐ Your request for design change is not agreed. Please proceed with the installation, testing and commissioning of the AMI Outstation under the current design.

Yours faithfully

Senior Electrical and Mechanical Engineer/
Technical Development
Water Supplies Department

Date:

* delete as appropriate



REQUEST FOR WORK TO BE CARRIED OUT BY THE WATER AUTHORITY

To: The Water Authority

ASN as assigned for the
Application for Water Supply
(WWO 542)

CCID (If applicable): _____

ASN (If applicable): _____

1. Applicant's Information

Same applicant as the applicant for Application
for Water Supply (WWO 542)

*Name of Mr/Mrs/Miss/Ms/Organisation (Chinese): _____

(English, in Block Letter): _____

Chinese commercial code in identity
card (If applicable):

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

*Identity Card Number/Identity Proof Document No./Business Registration Number: _____
(Please provide a photocopy of the above document. For details, please refer to Note 3)

Service Address Tel. No.: _____ Day-time Tel. No.: _____ Mobile Phone No.: _____

Fax No.: _____ Email: _____

Mailing Address:

Flat/Room	Floor	Block	Name of Building/Lot No./Demarcation District No.		
Street No.	Name of Street		Name of Estate/Village/Others		
			*HK/Kln/NT		
District					

2. Address of Water Using Premises

Same address as for
Application for Water Supply (WWO 542)

Flat/Room	Floor	Block	Name of Building/Lot No./Demarcation District No.		
Street No.	Name of Street		Name of Estate/Village/Others		
			*HK/Kln/NT		
District					

3. Types of Request for Work

(Please tick (✓) the appropriate box ☐ in one of the fields from (A) to (C). You can tick more than one box.)

(A) Meter Related (Note 2): --

- (1) ☐ Meter Test (Note 1 and Note 2) (Existing meter no.: _____)
- (2) ☐ Others (please specify):

(B) Pipe Related: --

- (1) ☐ Alteration of *Inside Service / Communal Service / Fire Service (Note 2)
- (2) ☐ Repair of *Inside Service / Communal Service / Fire Service (Note 2)
- (3) ☐ Diversion of Existing Government Water Mains
- (4) ☐ Others (please specify):

(C) Others: --

- (1) ☐ Provision of Temporary Fresh Water Supply for Water Suspension
- (2) ☐ Valve Operation *Potable / Flushing Inside Service / Fire Service
- (3) ☐ Modification of Valve Chamber
- (4) ☐ *Connection to / Relocation of Fire Hydrant
- (5) ☒ Others (please specify): **Procurement of wireless AMI equipment**

4. Supplementary Information concerning details of the work requested

(Please provide additional sheet if required.)

5. Applicant's Undertaking and Agreement

I / We fully understand and agree to abide by the content of items (a) to (c) of the following undertaking and agreement.

UNDERTAKING AND AGREEMENT

- (a) The applicant agrees to pay the charge for testing of meter if the meter is found to register correctly in the meter test.
- (b) The applicant agrees to pay to the Government of the Hong Kong Special Administrative Region the cost of the work requested by the applicant under this Form to be carried out by the Water Authority including all costs, fees, required to be paid by reason of any enactment or regulation or bye-law in relation to or for the execution of the works and including prescribed fees and economic costs referred to in Schedule 3 of the Land (Miscellaneous Provisions) Ordinance Cap 28 ("the Ordinance") for an extension in respect of an excavation permit made under the Ordinance for the execution of the works, labour, materials and supervision charges. The applicant shall pay the cost of the work within 14 days of receiving the demand note from the Water Authority.
- (c) The applicant fully understands and agrees that the Water Authority may use the data collected from the applicant in connection with this application for the purposes of, or directly related to, the processing of this application, any work to be carried out by the Water Authority and the general management and administration of the waterworks or the above mentioned fire service/inside service/communal service. If the applicant does not provide sufficient data, the Water Authority may not be able to process the application. The applicant agrees that the data collected may be transferred to other Government bureaux and departments and any other relevant parties for the aforesaid purposes. The applicant further agrees that data collected from the applicant (including the name of the applicant and the address of the premises) may be made known to the general public (e.g. by publishing the same on the internet). The applicant understands that he/she/they may make a request to the Departmental Secretary of the Water Supplies Department at 48/F, Immigration Tower, 7 Gloucester Road, Hong Kong for access to and correction of the personal data.

Date: _____

Applicant's signature / Signature of
authorised person and company's chop: _____

**Same applicant as the applicant for
Application for Water Supply
(WWO 542)**

Notes:

- According to Waterworks Regulations, a meter shall be deemed to register correctly if its inaccuracy does not exceed 3% above or below the correct amount. If the meter is tested to register correctly, the water and sewage charges will not be adjusted and the consumer shall pay the charge for testing the meter. If it is tested to be defective, the water and sewage charges will be adjusted accordingly.
- For work type (A)(1), (B)(1) and (B)(2), the application form must be completed by the consumer/agent of the related meter or fire service/inside service/communal service.
- For a firm/company, a photocopy of the Business Registration Certificate should be attached to the application. For individual applicant, the applicant should attach a photocopy of his/her identity card or identity proof document (e.g. Passport) for our checking of his/her identity. The photocopy of identity card and identity proof document will be destroyed immediately after the checking process.