

Section 6 - Employer's Requirements

Table of Contents

1	Scope of Supply of Plant and Services	6-3
2.	Specifications.....	6-4
3.	Drawings.....	6-5
4.	Supplementary Information.....	6-6
5.	Certificates	6-7
	5.1 Form of Completion Certificate	6-8
	5.2 Form of Operational Acceptance Certificate	6-9
6.	Change Orders	6-10
	6.1. Change Order Procedure.....	6-11
	6.1.1 General	6-11
	6.1.2 Change Order Log.....	6-11
	6.1.3 References for Changes.....	6-11
	6.2 Change Order Forms	6-12
	6.2.1 Request for Change Proposal Form	6-12
	6.2.2 Estimate for Change Proposal Form	6-13
	6.2.3 Acceptance of Estimate Form	6-14
	6.2.4 Change Proposal Form	6-15
	6.2.5 Change Order Form	6-17
	6.2.6 Pending Agreement Change Order Form	6-18
	6.2.7 Application for Change Proposal Form	6-19
7.	Personnel Requirements	6-20
8.	Equipment Requirements.....	6-23
9.	Schedule of Key dates	6-24
10.	Statement of Deviations	6-25
11.	Electrical contractors license.....	6-27
12.	Outline quality plan	6-28

13. Outline Safety, Health and Environment (SHE) Plan 6-29

14. Detail of foreign currency 6-30

15. Proposal for equipment / systems 6-31

1. Scope of Supply of Plant and Services

(As per volume 2 of Section -6)

2. Specifications

(As per volume 2 of Section -6)

3. Drawings

(As per volume 3 of Section -6)

4. **Supplementary Information**

5. Certificates

5.1 Form of Completion Certificate

Contract: [. . . .insert name of contract and contract identification details. . . .]

Date:

Certificate No.:

To: [. . . .insert name and address of contractor. . . .]

Dear Ladies and/or Gentlemen,

Pursuant to GCC Clause 24 (Completion of the Facilities) of the General Conditions of the Contract entered into between yourselves and the Employer dated [. . . .insert date. . . .], relating to the [. . . .brief description of the Facilities], we hereby notify you that the following part(s) of the Facilities was (were) complete on the date specified below, and that, in accordance with the terms of the Contract, the Employer hereby takes over the said part(s) of the Facilities, together with the responsibility for care and custody and the risk of loss thereof on the date mentioned below.

- 1. Description of the Facilities or part thereof: [. . . .description]
- 2. Date of Completion: [. . . .date]

However, you are required to complete the outstanding items listed in the attachment hereto as soon as practicable.

This letter does not relieve you of your obligation to complete the execution of the Facilities in accordance with the Contract nor of your obligations during the Defect Liability Period.

Very truly yours,

[. . . .Signature]

Project Manager

5.2 Form of Operational Acceptance Certificate

Contract: [. . . .insert name of contract and contract identification details. . . .]

Date:

Certificate No.:

To: [. . . .insert name and address of contractor. . . .]

Pursuant to GCC Subclause 25.3 (Operational Acceptance) of the General Conditions of the Contract entered into between yourselves and the Employer dated [. . .date. . .], relating to the [. . .brief description of the facilities. . .], we hereby notify you that the Functional Guarantees of the following part(s) of the Facilities were satisfactorily attained on the date specified below.

1. Description of the Facilities or part thereof: [. . .description . . .]
2. Date of Operational Acceptance: [. . .date . . .]

This letter does not relieve you of your obligation to complete the execution of the Facilities in accordance with the Contract nor of your obligations during the Defect Liability Period.

Very truly yours,

[. . . .Signature]

Project Manager

6. Change Orders

6.1 Change Order Procedure

- 6.1.1 General
- 6.1.2 Change Order Log
- 6.1.3 References for Changes

6.2. Change Order Forms

- 6.2.1 Request for Change Proposal
- 6.2.2 Estimate for Change Proposal
- 6.2.3 Acceptance of Estimate
- 6.2.4 Change Proposal
- 6.2.5 Change Order
- 6.2.6 Pending Agreement Change Order
- 6.2.7 Application for Change Proposal

6.1. Change Order Procedure

6.1.1 General

This section provides samples of procedures and forms for implementing changes in the Facilities during the performance of the Contract in accordance with GCC Clause 39 (Change in the Facilities) of the General Conditions.

6.1.2 Change Order Log

The Contractor shall keep an up-to-date Change Order Log to show the current status of Requests for Change and Changes authorized or pending. Entries of the Changes in the Change Order Log shall be made to ensure that the log is up-to-date. The Contractor shall attach a copy of the current Change Order Log in the monthly progress report to be submitted to the Employer.

6.1.3 References for Changes

- (1) Request for Change as referred to in GCC Clause 39 shall be serially numbered CR-X-nnn.
- (2) Estimate for Change Proposal as referred to in GCC Clause 39 shall be serially numbered CN-X-nnn.
- (3) Acceptance of Estimate as referred to in GCC Clause 39 shall be serially numbered CA-X-nnn.
- (4) Change Proposal as referred to in GCC Clause 39 shall be serially numbered CP-X-nnn.
- (5) Change Order as referred to in GCC Clause 39 shall be serially numbered CO-X-nnn.

Note:

- (a) Requests for Change issued from the Employer's Home Office and the Site representatives of the Employer shall have the following respective references:

Home Office	CR-H-nnn
Site	CR-S-nnn

- (b) The above number "nnn" is the same for Request for Change, Estimate for Change Proposal, Acceptance of Estimate, Change Proposal and Change Order.

6.2 Change Order Forms

6.2.1 Request for Change Proposal Form

[*Employer's letterhead*]

To: [*Contractor's name and address*]

Date:

Attention: [*Name and title*]

Contract Name: [*Contract name*]

Contract Number: [*Contract number*]

Dear Ladies and/or Gentlemen:

With reference to the captioned Contract, you are requested to prepare and submit a Change Proposal for the Change noted below in accordance with the following instructions within [*number*] days of the date of this letter [or on or before (*date*)].

1. Title of Change: [*Title*]
2. Change Request No./Rev.: [*Number*]
3. Originator of Change:
Employer: [Name]
Contractor (by Application for Change Proposal No. [Number Refer to Annex 6.2.7])
4. Brief Description of Change: [*Description*]
5. Facilities and/or Item No. of equipment related to the requested Change: [*Description*]
6. Reference drawings and/or technical documents for the request of Change:

<i>Drawing No./Document No.</i>	<i>Description</i>
---------------------------------	--------------------
7. Detailed conditions or special requirements on the requested Change: [*Description*]
8. General Terms and Conditions:
 - (a) Please submit your estimate showing what effect the requested Change will have on the Contract Price.
 - (b) Your estimate shall include your claim for the additional time, if any, for completing the requested Change.
 - (c) If you have any opinion that is critical to the adoption of the requested Change in connection with the conformability to the other provisions of the Contract or the safety of the Plant or Facilities, please inform us in your proposal of revised provisions.
 - (d) Any increase or decrease in the work of the Contractor relating to the services of its personnel shall be calculated.
 - (e) You shall not proceed with the execution of the work for the requested Change until we have accepted and confirmed the amount and nature in writing.

[*Employer's name*]

[*Signature*]

[*Name of signatory*]

[*Title of signatory*]

6.2.2 Estimate for Change Proposal Form

[*Contractor's letterhead*]

To: [*Employer's name and address*]

Date:

Attention: [*Name and title*]

Contract Name: [*Contract name*]

Contract Number: [*Contract number*]

Dear Ladies and/or Gentlemen:

With reference to your Request for Change Proposal, we are pleased to notify you of the approximate cost to prepare the below-referenced Change Proposal in accordance with GCC Subclause 39.2.1 of the General Conditions. We acknowledge that your agreement to the cost of preparing the Change Proposal, in accordance with GCC Subclause 39.2.2, is required before estimating the cost for change work.

1. Title of Change: [*Title*]
2. Change Request No./Rev.: [*Number*]
3. Brief Description of Change: [*Description*]
4. Scheduled Impact of Change: [*Description*]
5. Cost for Preparation of Change Proposal: [*insert costs, which shall be in the currencies of the contract*]

(a) Engineering	(Amount)
(i) Engineer _____ hours (hrs) x _____ rate/hr = _____	
(ii) Draftsperson _____ hrs x _____ rate/hr = _____	
Sub-total _____ hrs	_____
Total Engineering Cost	_____
(b) Other Cost	_____
Total Cost (a) + (b)	_____

[*Contractor's name*]

[*Signature*]

[*Name of signatory*]

[*Title of signatory*]

6.2.3 Acceptance of Estimate Form

[*Employer's letterhead*]

To: [*Contractor's name and address*]

Date:

Attention: [*Name and title*]

Contract Name: [*Contract name*]

Contract Number: [*Contract number*]

Dear Ladies and/or Gentlemen:

We hereby accept your Estimate for Change Proposal and agree that you should proceed with the preparation of the Change Proposal.

1. Title of Change: [*Title*]
2. Change Request No./Rev.: [*Request number/revision*]
3. Estimate for Change Proposal No./Rev.: [*Proposal number/revision*]
4. Acceptance of Estimate No./Rev.: [*Estimate number/revision*]
5. Brief Description of Change: [*Description*]
6. Other Terms and Conditions: In the event that we decide not to order the Change accepted, you shall be entitled to compensation for the cost of preparing the Change Proposal described in your Estimate for Change Proposal mentioned in para. 3 above in accordance with GCC Clause 39 of the General Conditions.

[*Employer's name*]

[*Signature*]

[*Name of signatory*]

[*Title of signatory*]

6.2.4 Change Proposal Form

[*Contractor's letterhead*]

To: [*Employer's name and address*]

Date:

Attention: [*Name and title*]

Contract Name: [*Contract name*]

Contract Number: [*Contract number*]

Dear Ladies and/or Gentlemen:

In response to your Request for Change Proposal No. [Number], we hereby submit our proposal as follows:

1. Title of Change: [*Name*]
2. Change Proposal No./Rev.: [*Proposal number / revision*]
3. Originator of Change: Employer: [*Name*] / Contractor: [*Name*]
4. Brief Description of Change: [*Description*]
5. Reasons for Change: [*Reason*]
6. Facilities and/or Item No. of Equipment related to the requested Change: [*Facilities*]
7. Reference drawings and/or technical documents for the requested Change:
[*Drawing/Document No./Description*]
8. Estimate of increase/decrease to the Contract Price resulting from the Change Proposal:

Amount

[*insert amounts in the currencies of the Contract*]

(a) Direct material	_____
(b) Major construction equipment	_____
(c) Direct field labour (Total hrs)	_____
(d) Subcontracts	_____
(e) Indirect material and labour	_____
(f) Site supervision	_____
(g) Head office technical staff salaries	
Process engineer _____ hrs @ _____ rate/hr	_____
Project engineer _____ hrs @ _____ rate/hr	_____
Equipment engineer _____ hrs @ _____ rate/hr	_____
Procurement _____ hrs @ _____ rate/hr	_____
Draftsperson _____ hrs @ _____ rate/hr	_____
Total _____ hrs	_____

- (h) Extraordinary costs (computer, travel, etc.) _____
- (i) Fee for general administration, % of Items _____
- (j) Taxes and customs duties _____
- Total lump sum cost of Change Proposal [*Sum of items (a) to (j)*]
- Cost to prepare Estimate for Change Proposal [*Amount payable if Change is not accepted*]

- 9. Additional time for Completion required due to Change Proposal
- 10. Effect on the Functional Guarantees
- 11. Effect on the other terms and conditions of the Contract
- 12. Validity of this Proposal: within [Number] days after receipt of this Proposal by the Employer
- 13. Other terms and conditions of this Change Proposal:
 - (a) You are requested to notify us of your acceptance, comments or rejection of this detailed Change Proposal within [Number] days from your receipt of this Proposal.
 - (b) The amount of any increase and/or decrease shall be taken into account in the adjustment of the Contract Price.
 - (c) Contractor's cost for preparation of this Change Proposal: [. . . insert amount. This cost shall be reimbursed by the employer in case of employer's withdrawal or rejection of this Change Proposal without default of the contractor in accordance with GCC Clause 39 of the General Conditions . . .]

[Contractor's name]
 [Signature]
 [Name of signatory]
 [Title of signatory]

6.2.5 Change Order Form

[*Employer's letterhead*]

To: [*Contractor's name and address*]

Date:

Attention: [*Name and title*]

Contract Name: [*Contract name*]

Contract Number: [*Contract number*]

Dear Ladies and/or Gentlemen:

We approve the Change Order for the work specified in the Change Proposal (No. [*number*]), and agree to adjust the Contract Price, Time for Completion, and/or other conditions of the Contract in accordance with GCC Clause 39 of the General Conditions.

1. Title of Change: [*Name*]
2. Change Request No./Rev.: [*Request number / revision*]
3. Change Order No./Rev.: [*Order number / revision*]
4. Originator of Change: Employer: [*Name*] / Contractor: [*Name*]
5. Authorized Price:
Ref. No.: [*Number*] Date: [*Date*]
Foreign currency portion [*Amount*] plus Local currency portion [*Amount*]
6. Adjustment of Time for Completion
None Increase [*Number*] days Decrease [*Number*] days
7. Other effects, if any

Authorized by: _____
Employer

Date: _____

Accepted by: _____
Contractor

Date: _____

6.2.6 Pending Agreement Change Order Form

[*Employer's letterhead*]

To: [*Contractor's name and address*]

Date:

Attention: [*Name and title*]

Contract Name: [*Contract name*]

Contract Number: [*Contract number*]

Dear Ladies and/or Gentlemen:

We instruct you to carry out the work in the Change Order detailed below in accordance with GCC Clause 39 of the General Conditions.

1. Title of Change: [*Name*]
2. Employer's Request for Change Proposal No./Rev.: [*number/revision*] dated: [*date*]
3. Contractor's Change Proposal No./Rev.: [*number / revision*] dated: [*date*]
4. Brief Description of Change: [*Description*]
5. Facilities and/or Item No. of equipment related to the requested Change: [*Facilities*]
6. Reference Drawings and/or technical documents for the requested Change:
[*Drawing / Document No. / Description*]
7. Adjustment of Time for Completion:
8. Other change in the Contract terms:
9. Other terms and conditions:

[*Employer's name*]

[*Signature*]

[*Name of signatory*]

[*Title of signatory*]

6.2.7 Application for Change Proposal Form

[*Contractor's letterhead*]

To: [*Employer's name and address*]

Date:

Attention: [*Name and title*]

Contract Name: [*Contract name*]

Contract Number: [*Contract number*]

Dear Ladies and/or Gentlemen:

We hereby propose that the work mentioned below be treated as a Change in the Facilities.

1. Title of Change: [*Name*]
2. Application for Change Proposal No./Rev.: [*Number / revision*] dated: [*Date*]
3. Brief Description of Change: [*Description*]
4. Reasons for Change:
5. Order of Magnitude Estimation (amount in the currencies of the Contract): [*Amount*]
6. Scheduled Impact of Change:
7. Effect on Functional Guarantees, if any:
8. Appendix:

[*Contractor's name*]

[*Signature*]

[*Name of signatory*]

[*Title of signatory*]

7. Personnel Requirements

Using Form PER-1 and PER-2 in Section 4 (Bidding Forms), the Bidder must demonstrate that it has personnel who meet the following requirements:

Sr. No	SECTOR	QUALIFICATION	EXPERIENCE LEVEL	NUMBERS
1.	Chief Project Manager (Team Leader)	Graduate in Electrical/Mechanical Engineering.	Minimum 3 years as in-charge of similar works and minimum total experience of 15 years	1
2.	Chief Coordinator (Dy. Chief Project Manager)	Graduate in Electrical/Mechanical Engineering.	Having 2 year metro experience and minimum total experience of 10 years	2 (1 for ECS/TVS and 1 for E&M works)
3	Design Engineers			
	Environment Control System (ECS)	Graduate in Concerned Disciplines	10 Years Experience out of which 2 years in the underground metro Environment Control System	1
	Tunnel Ventilation System (TVS)		5 Years Experience out of which 2 years in the underground metro Tunnel Ventilation System	1
	Electrical System		10 Years Experience out of which 2 years in the underground metro E&M System	1
	Fire Systems		5 Years Experience out of which 2 years in the underground metro system	1
	Hydraulic Systems		5 Years Experience out of which 2 years in the underground metro system	1
	Building management System (BMS)		5 Years Experience out of which 2 years in the underground metro Building management System	1

4	Station Manager	Graduate in Electrical/ Mechanical Engineering.	Minimum 5 years relevant experience	1 for each station
5	Resident Engineer (RE) as below (For Each Station)	Graduation / Diploma In Concerned Disciplines	Minimum 5 years relevant experience. 2 years as RE.	
	a. Mechanical Engineer			2 (1 for ECS/TVS and 1 for E&M
	b. Electrical Engineer			2 (1 for ECS/TVS and 1 for E&M works)
	c. BMS Engineer			1
	d. Fire Detection, fighting, hydraulic expert			1
6.	Site Supervisor as below (For Each Station)	Diploma In Concerned Disciplines	Minimum 2 years relevant experience.	
	Environment Control System			2
	Tunnel Ventilation System			1
	Building management System			1
	Electrical System			2
	Fire System			1
	Hydraulic System			1
	DG Engineer			1
7	Liaison Inspector	Diploma/ Science graduate with knowledge of computers		2
8	Quality Inspector	Graduate	Minimum 5 years relevant experience	1

9	Safety Staff	As per SHE Manual
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In case JMRC judges that the continuation of any person of the bidder including its subcontractor (s) is not in the interest of the project, a written notice will be given to the bidder who will promptly remove the person within a week. JMRC can withdraw the approval of such persons if continuation of the person is judged by the JMRC.

NOTE – Please submit the CV of above Key Personals (up to resident engineers) in the format prescribed in PER-2.

STAMP & SIGNATURE OF AUTHORIZED SIGNATORY

8. Equipment Requirements

Using Form EQU in Section 4 (Bidding Forms), the Bidder must demonstrate that it has the key equipment listed below:

No.	Equipment Type and Characteristics	Minimum Number Required
1	Bidder to specify the available machineries, tools, plants and testing equipments that will be available by them during execution of the works.	
2		
3		
4		
5		

9. Schedule of Key Dates

Key Dates	Description	Key Date in Weeks
KD-1	Detail Engineering and Submittal of Technical proposals of major equipment to Engineer for Approval	24
KD-2	Submission of Working Drawings/ Shop Drawings	30
KD-3	Delivery of Major Equipment to Site	56
KD-4	Installation of Majority of Equipment and commence system testing	70
KD-5	Completion of Substantial Works (including BMS SCADA Interfacing) to permit Integrated Testing (Completion of System Acceptance Testing)	82
KD-6	Completion of Balance Works	80
KD-7	Integrating Testing and Handing over to Employer	90
KD-8	Peak Season Performance Testing	108
KD-9	Integration of system with existing line and Final System Adjustment	110

Note:

- a) All the key dates are from the date of commencement.
- b) For the part week, full week will be considered for this purpose.
- c) The site shall be made available progressively and if some part is not made available then the extension of time shall be allowed only to the work/KD of that particular part.

10. Statements of Deviations

Chapter Number	Clause Number	Details of Deviations	Remarks explaining reasons for deviations and why it may be considered by the employer	Confirming that price of withdrawal of each deviation/s is given in Financial Package (Yes/No)

1. We hereby confirm that the pricing for unconditional withdrawal of the above deviations has been given in the financial bid.
2. We hereby confirm that all implicit and explicit deviations, comments and remarks mentioned elsewhere in our proposal shall be treated as NULL and VOID and stand withdrawn.
3. We hereby confirm that but for the deviations noted in this, our offer is fully and truly compliant.

STAMP & SIGNATURE OF AUTHORIZED SIGNATORY

Note:

Where there is no deviation, the statement should be returned duly signed with an endorsement indicating 'No Deviations'. In case, Performance of deviations is not submitted or submitted as blank, it will be construed that the bidder has not proposed any deviations from bid documents and will provide all equipment as per specifications.

Pricing of Unqualified Withdrawal of
Conditions, Qualifications, Deviations, etc

(To be submitted with financial bid only)

Item	Condition, Qualification, Deviation, etc	Key date affected by each condition, qualification, deviation, etc.	Increase or Decrease for unqualified withdrawal of each conditions, qualification, deviation etc	
			<u>Foreign Currency</u>	<u>Indian Rupees</u>
Total				

Note: In connecting this appendix, the Bidder shall show every key date that will be affected by each condition, qualification, deviation, etc., included in his Financial Package for the unqualified withdrawal of that condition, qualification, deviation, etc.

1. We hereby confirm that the pricing for unconditional withdrawal of the above deviations has been given in the financial bid.
2. We hereby confirm that all implicit and explicit deviations, comments and remarks mentioned elsewhere in our proposal shall be treated as NULL and VOID and stand withdrawn.
3. We hereby confirm that but for the deviations noted in this Statement of Deviation our offer is fully and truly compliant.

STAMP & SIGNATURE OF AUTHORIZED SIGNATORY

11. Electrical Contractor License

(To be enclosed for Bidder or the Licensed Electrical Subcontractor)

12. Outline Quality Plan

1. Bidder shall submit an Outline Quality Plan illustrating the intended means of compliance with of the Employer's Requirements and setting out in summary form an adequate basis for the development of the more detailed document required as per SCC. The Outline Quality Plan shall contain sufficient information to demonstrate clearly the proposed method of achieving the Bidder's quality objectives with regard to the Employer's Requirements.
2. Bidder shall establish and maintain a Quality Assurance System in design and construction procedures and the interfaces between them. This Quality Assurance system shall be applied without prejudice to, or without in any way limiting, any Quality Assurance Systems that the Bidder already maintains.
3. The Bidder shall submit as part of his Bid an Outline Quality Plan which shall contain sufficient information to demonstrate clearly the Bidder's proposals for achieving effective and efficient Quality Assurance System. The Outline Quality Plan should include an outline of the procedures and regulations to be developed and the mechanism by which they will be implemented for ensuring Quality as required.
4. Bidder may be requested by the Employer to amplify, explain or develop its Outline Quality Plan prior to the date of acceptance of its Bid and to provide more detail with a view to reaching provisional acceptance of such a plan.

13. Outline Safety, Health and Environment (SHE) Plan

1. Bidder shall submit with its Bid an Outline Safety, Health and Environment Plan which shall contain sufficient information to demonstrate clearly the Bidder's proposals for achieving effective and efficient safety, health & environment procedures. The Outline Safety, Health and Environment Plan should include an outline of the safety procedures and regulations to be developed and the mechanism by which they will be implemented for ensuring safety as required by the Employer's Requirements.
2. The Outline Safety, Health and Environment Plan shall be headed with a formal statement of policy in relation to safety, health & environment and shall be sufficiently informative to define the Bidder's safety plans and set out in summary an adequate basis for the development of the Site Safety, Health and Environment Plan to be submitted in accordance with the Employer's Requirements.
3. Bidder may be requested by the Employer in writing to amplify, explain or develop its Outline Safety, Health and Environment Plan prior to the date of acceptance of the Bid and to provide more details with a view to reaching provisional acceptance of such a plan.

14. Detail of foreign currency

(Bidder should submit the details regarding the type of foreign currency used in the Bill of Quantities with the technical proposal)

S.No.	Name of Currency	Remarks
1		
2		
3		

15. PROPOSAL FOR EQUIPMENT / SYSTEMS

Sl. No.	Name of the equipment/system	Name of Vender	Address of the vendor
1	Water Cooled Chillers		
2.	Cooling Towers		
3.	Chilled Water and Condenser Water Pumps		
4	Air Handling Units		
5.	Motorized Fire Dampers		
6.	Ventilation Fans		
7	Ducts and GI Sheets		
8	Grilles and Diffusers		
9	Valves, Pipes and Pipe Fittings		
10	Fan Coil Units		
11	Thermal Insulations		
12	Fire Rated Ducts		
13	XLPE/ FRLS Cables (LT Cables/ Control Cable) and XLPE-LSZH Cables		
14	MCC & LCP Panels		
15	Ventilation/ Damper DB		
16	SCADA equipment.		
17	SCADA system		
18	Tunnel Ventilation Fans &		

	Tunnel Booster Fans		
19	Tunnel Ventilation Damper		
20	Sound Attenuators		
21	Fire Rated Spray		
22	BMS System		
23	Track Way Exhaust Fans		
24	Compressors		
25	Tunnel Ventilation Fan Motor		
26	PLC		
27	Electrical Panels		
28	Wires		
29	Fire Detection System		
30	Fire and Hydraulic Pumps		
31	Lighting Fixtures		
32	Water Treatment Plant		
33	UPS System		
34	Diesel Engine		
35	Alternator		
36	Batteries		
37	Acoustic Enclosure		
38	Turbo Charger		
39	Earthing System		
40	Any other item		

