No. DIT(SWAN-SITEG)21/2005 Government of Himachal Pradesh Department of Information Technology

From

Secretary (IT) to the Government of Himachal Pradesh

To

- 1. All the Administrative Secretaries to the Government of Himachal Pradesh
- 2. All the Heads of the Departments in Himachal Pradesh
- 3. All the Managing Directors/ CEOs of Corporations/ Boards in Himachal Pradesh
- 4. All the Divisional Commissioners in Himachal Pradesh All the Deputy Commissioners in Himachal Pradesh

Dated: Shimla-2, the March 9, 2007

Subject: Use of HIMSWAN (Himachal Pradesh State Wide Area Network)

Sir/ Madam,

In continuation to this office letter of even number dated June 28, 2006, it is informed that Society for IT and e-Governance (SITEG) (set up by the Department of IT, Government of Himachal Pradesh) has signed an Agreement on February 2, 2007 with M/s Hewlett Packard for setting up Himachal Pradesh State Wide Area Network (HIMSWAN) and operating & maintaining it for a period of five years. As per the Agreement, M/s HP is expected to supply and install equipment for 133 Points of Presence (PoPs - list has been hosted on the website of this Department: www.himachaldit.gov.in and also emailed to you) by the end of June, 2007. To put it succinctly, all district, sub-division, tehsil, sub-tehsil and block headquarters are being interconnected. Project implementation shall take place in 3 phases as per the Annexure-I. It is reiterated that as per the directions of the Government of India, which have been further reaffirmed by the State Government, no department / organization shall set up its own state-wide network. Instead, all departments / organizations shall use HIMSWAN by getting connected to it.

All the Departments can connect their field offices to HIMSWAN (by linking to the nearest PoP) using 'horizontal connections'. SITEG has finalized rates for equipment

required to be installed in horizontal offices to get connected to HIMSWAN. Cost of this last mile connectivity from the POP or from the nearest focal point (e.g. group of offices located in the same complex) has to be borne by the line departments / organisations, though SITEG will try to coordinate things in such a way that the expenditure to be incurred on connecting various offices is minimized and departments having limited budget (but ready State-wide applications) are assisted financially as far as possible. Apportionment of recurring cost (intranet / internet bandwidth) shall be done among the endusers based on projected usage. Maintenance charges after expiry of 5 years warranty are also to be borne by the end users irrespective of the connectivity solution.

There are various connectivity options for horizontal offices, like Local Area Network (LAN), Wireless, xDSL, Leased Line, Broadband, ISDN etc., to get connected to HIMSWAN. However, such connectivity to HIMSWAN will have one time and recurring expenditure. It is, therefore, suggested that due care must be taken for identifying the correct option for getting hooked on to HIMSWAN based on various factors viz. which database application already running or under development process which require connectivity to transmit data from field to head quarter (and at what data transmission rate) or whether there is a need to access information from internet and to transmit / receive information using e-mail. For this purpose, the field engineers of M/s HP (HIMSWAN Operator) and 3i-Infotech (HIMSWAN Consultant) shall interact with the field offices of various departments and organization while carrying out the survey, whenever called upon to do so. Their contact details are being hosted on the website of this Department, besides being emailed. One of the following options can be chosen after consulting engineers in SITEG and based on the criteria mentioned in Annexure-II.

In order to enable this Department to render proper advice, it is requested that an online form (available at www.himachaldit.gov.in) indicating number of PCs, nature of applications (existing and proposed) at various levels of administrative hierarchy may be filled. The departments / organizations not having internet access as of now may complete the format given in Annexure-IV and send the same to this office. Annexure-IV needs to be filled only once at the level of HOD / CEO (including all the field offices in the State).

Prices (one time and recurring) of equipment required to be procured for above mentioned connectivity options are attached as **Annexure-III**. **As per the RFP and**

subsequent Agreement, purchase orders for all horizontal connections have to be placed by SITEG, so that the HIMSWAN Operator does not need to go to a number of offices for picking up the orders and then for collecting the payments. Centralized order and execution can also be monitored more closely. Moreover, it would also eliminate the possibility of technical overlap and duplication.

You are therefore, requested to finalise your horizontal connectivity requirement and send the same to SITEG along with demand draft of requisite amount (capital cost as per Annexure-III), so that orders placed on to M/s HP can be executed by the time all POPs become operational.

Yours faithfully,

Director IT -cum- Member Secretary (EC) SITEG, Department of Information Technology, Government of Himachal Pradesh.

Project Implementation Cycle

S. No. Items Quantity

Total Project Implementation cycle → 19 Weeks from the date of award of work

Phase -I:

SHQ, all DHQs and all SDHQ/THQ/BHQs in Shimla district are required to be integrated on priority basis within 10 weeks.

Phase-II:

All POPs of Kangra and Mandi districts shall be covered within 5 more weeks.

Phase-III:

Rest of the POPS are to be completed in remaining 4 weeks

1.	SHQ	1
2.	DHQ	12
3.	THQ	120
4.	Total Number of POPs (vertical)	133
5.	Horizontal Offices at these above POPs (will be connected as	As conveyed
	per the request from the respective Departments and Offices by SITEG	
	of GoHP from time to time)	

Supply, installation and commissioning of equipment in case of horizontal offices shall be done within a period of 50/70 days from the date of a written supply order in this regard.

Connectivity Options

1. Local Area Network (LAN)/ Extended LAN: This is one of the best & cheapest solutions to connect field offices with HIMSWAN. If the distance between the office and the PoP is below 100m then it can be connected to PoP using CAT5e/ CAT 6 cable (Category 5 Enhanced or Category 6 copper cables). However, if the distance varies from 100m to 450m then the same can be connected using Fiber Optic Cable (OFC). In both the cases, cable laying cost and cost of switch (if required), would have to be borne by the concerned office. It is a one time cost solution and no recurring charges are required for horizontal connectivity. Following table summaries the situations when this option can be chosen:

Distance	When the distance is <= 450 m		
Utility	1. For distance below 100 m, any office can connect to HIMSWAN using CAT5e or CAT6.		
	2. If distance is > 100m and below 450m and integrated database application(s) are being used or are proposed to be used over network (state-wide), then one should go for extended LAN over OFC e.g. to connect sub-treasuries with district treasury office.		
Equipment required	 Structured cabling Switch (if required) 		

2. Wireless Option: The Departments can go for this option, if the distance between PoP and the office is fairly large and it is not possible to extend LAN connectivity as described above. This option also involves one time connectivity charges as license free frequency band is proposed to be used. The equipment required in this case is Wireless End Point (which includes indoor unit as well as outdoor unit i.e. antenna) and Mast (optional) if line of sight is not clear between PoP and office site. Following table summaries the situations when this option can be chosen:

Distance	When the distance is > 500 m and there is line of sight		
	between PoP and office		
Utility	Integrated database application(s) are being used or proposed		
	to be used over network (state-wide) then office should go for		
	wireless connectivity due to the distance limitation in		
	extended LAN connectivity		
Equipment required	Customer Premises Equipment (CPE) and MAST		
	2. Switch (if required)		
	3. Grounding and surge protection		

3. **xDSL:** This option involves both one time cost (for xDSL Modem) as well as recurring cost (for hiring copper media from BSNL). **This is similar to the existing broadband connectivity of BSNL.** The only difference is that BSNL will lay cable, similar to telephone line but non-activated line ('dead pair'), between PoP and office and for maintaining this line, BSNL will charge annual rent. M/s HP will supply end equipment i.e. xDSL Modem. However, this connectivity primarily depends on availability of dead pair with BSNL at a particular location. Following table summaries the situations when this option can be chosen:

Distance	When the distance is > 1 Km and neither there is line of sight			
	between PoP and office nor there is very data intensive			
	application is running			
Utility	Though capital cost is less, recurring cost starts from Rs.			
	4500/- per annum onwards. This option should, therefore, be			
	used when some web based applications/ centralized			
	applications are being used or proposed to be used in near			
	future e.g. feeding weekly rates in Food & Supplies website.			
Equipment required	1. xDSL Modem			
	2. Dead Pair from BSNL on rental basis			

If dead pair is not available from BSNL, even then user department can lay its own cable from their office to nearest PoP. However, for smaller distances, extended LAN is advisable in place of xDSL connectivity.

4. **Broadband:** This is the second cheapest option after LAN using which an office can be connected to HIMSWAN on existing office telephone line. SITEG is working out the details with BSNL to connect horizontal offices with PoP using broadband connectivity (i.e. normal internet broadband connection installed in various offices / homes). Requisite changes in BRAS located in Chandigarh are being carried out. In this case, as an alternative to sending user to Internet, he will be re-directed to HIMSWAN PoP from BSNL exchange itself. Thus, the user will remain in closed network and will be secured. List of locations where Broadband / Triple Play (data, voice and video) facility is available will be hosted on the website of this Department. Following table summaries the situations when this option can be chosen:

Distance	When the distance is > 450m and neither there is line of sight		
	between PoP and office nor there is very data intensive		
	application is running		
Utility	Generally download speed is much faster than upload speed.		
	It is, therefore, useful to access e-mail, internet etc or some		
	web based applications/ centralized applications are be		
	used or proposed to be used in near future. This connection		
	ideal if only a few PCs (say 3 or 4) are to be connected		
	SWAN.		
Equipment required	Broadband connectivity on rental basis		
	2. Broadband Modem from BSNL either on rental or one		
	time cost basis		

5. Leased Line: This option can be used only in such cases when the distance between office and PoP is quite large (say 1 KM or more) and neither there is line of sight, which is required in case of wireless, nor broadband/ xDSL connectivity is possible due to BSNL limitations but BSNL is ready to provide leased line connectivity. This is the costliest option among all and should only be used if connecting field offices is vital i.e. data is being captured in real time situation. Similarly, all offices having a large number of nodes (i.e. PCs on a Local Area Network) should also

go for this option. Following table summaries the situations when this option can be chosen:

Distance	When local LAN or extended LAN is not possible. Neither		
	there is line of sight between PoP and office		
Utility	This option should be used when field office provides critical		
	inputs and the same need to be fed into the centralized		
	database in real time environment, high speed connectivity is		
	required e.g. Sales Tax barriers for VAT application or		
	Telemedicine Application in CHCs, PHCs or offices having		
	large number of nodes.		
Equipment required	Router at customer premises from SITEG		
	2. Leased line connectivity and Modem from BSNL on		
	rental basis		

6. **ISDN:** This is another option to connect horizontal offices to PoP using ISDN facility from BSNL (i.e. recurring cost involved). It is better to use dialup ISDN to reduce the recurring cost of connectivity. However, it depends upon the availability of ISDN facility in BSNL exchange. In Himachal, BSNL is restricting its use and will be available in selected locations only (list of ISDN availability in the State will be hosted on the website and updated from time to time). Following table summaries the situations when this option can be chosen:

Distance	When local LAN or extended LAN is not possible and there is no line of sight between PoP and office
Utility	Office provides critical inputs and the same need to be fed in real time environment but connectivity may not be required on permanent basis i.e. 24x7 e.g. telemedicine project where remote site (dispensary) is to be connected to super specialty station (IGMC) as and when required. ISDN connectivity is charged on pay-as-per-usage. This is more suitable where end user requires connectivity only for limited time during entire working day.
Equipment required	ISDN connectivity and NT1 from BSNL Series (if a proint 1)
	2. Switch (if required)

Basic Horizontal Connectivity options

NOTE: Installation, integration and 5 years' comprehensive onsite warranty charges are included in the following rates finalized after HIMSWAN tender. Detailed specifications and features have been hosted on the website as a part of the Agreement with M/s HP India Sales Pvt. Ltd. If a department / organization can procure any equipment with same or better specifications, it is free to do so. However, equipment warranty in such cases shall be provided by the supplier of such equipment. HIMSWAN Operator will only provide assistance for integration in HIMSWAN (i.e. M/s HP)

A. Wireless Solution:

Item Description	Supply & Installation of unit cost in Rupees (including comprehensive onsite warranty for 5 years, taxes, duties and other levies, packing, transportation, insurance etc)	
Wireless End Point – (Maksat CPE Max)	22360	
(optional items)		
i. MAST (5m) or	21895	
ii. MAST (9m) or	37250	
iii. MAST (15m)	53750	
iv. Switch*		

^{*} Details of Switch are given separately. Per meter cost of mast (excluding fixed costs of foundation, earthing etc.) is being hosted separately.

B. xDSL Solution:

Item Description	Supply & Installation of unit cost in Rupees (including comprehensive onsite warranty for 5 years, taxes, duties and other levies, packing, transportation, insurance etc)
xDSL CPE	7651
(optional items)	
Switch*	

^{*} Details of Switch are given separately

Recurring Cost (tentative cost, exact cost to be taken from BSNL)		
Item	Distance	Annual Rent
Dead pair cost from BSNL	1 KM	4500/annum
Dead pair cost from BSNL	2 KM	6500/annum
Dead pair cost from BSNL	2 KM	8500/annum
Dead pair cost from BSNL	4 KM	10000/annum

C. MLLN Solution:

ears, taxes, duties and other levies, packing, eansportation, insurance etc)
3368
2

^{*} Details of Switch are given separately

Recurring Cost (tentative cost, exact cost to be taken from BSNL)			
Item	Speed	Annual Rent	
Leased line 128 Kbps with 5	128 Kbps	43559.8/annum	
KM distance			
Leased line 128 Kbps with 10	128 Kbps	51059.8/annum	
KM distance			
Leased line 256 Kbps with 5	256 Kbps	66714.1/annum	
KM distance			
Leasec line 256 Kbps with 10	256 Kbps	74214.1/annum	
KM distance			

In order to see published rates of BSNL for various equipment and services, please visit www.bsnl.co.in and then choose appropriate service from pull down menu and go to tariff of appropriate service. These figures can be used for budgetary estimates. The IT Department will negotiate lower rates with BSNL.

D. SWITCH:

S. No.	Item Description	Supply & Installation of unit cost in Rupees (including comprehensive onsite warranty for 5 years, taxes, duties and other levies, packing, transportation, insurance etc)
1	8 x 10/100Mbps, 1 x 1000 BaseT, 1 SFP Layer2 managed Switch (Dlink 3010g)	8289

2	16 x 10/100Mbps and 2 open	7651
	slots Layer2 managed Switch	
	(Dlink 3018)	
3	24 ports 10/100Mbps Layer2	10202
	managed switch with gigabit	
	copper module (Dlink)	
4	24 ports 10/100Mbps Layer2	17853
	managed switch with gigabit	
	Fibre module (Dlink)	
5	Media converter- Fibre to UTP	6376 (converter needed based on actual
	(Dlink DEM-310GT)	termination)

E. LAN Solution (Structured Cabling):

This is the master list for passive cabling for per component basis. Departments would be paying based on actual quantities.

S. No.	Item	Unit	Supply & Installation of unit cost in Rupees (including comprehensive onsite warranty for 5 years, taxes, duties and other levies, packing, transportation, insurance etc)
1.	UTP Cable (Dlink)	Per mtrs.	16
2.	Jack Panel (Dlink)	1 No.	4653
3.	Patch Cord 3 ft (Dlink)	1 No.	127
4.	Patch Cord 7 ft (Dlink)	1 No.	167
5.	Information Outlet (Dlink)	1 No.	163
6.	RACK (APW)	1 No.	6293
7.	UTP Cable Laying	Per mtrs.	6
8.	Jack Panel Termination	1 No.	1119
9.	IO Termination	1 No.	201
10.	Rack installation	1 No.	574
11.	Conduiting (Fixing of PVC pipes)	Per mtrs.	46
12.	Single Mode Fibre Cable	Per mtrs.	52
13.	LIU Box (including Fibre Connector)	1 No.	2767
14.	Fibre Patch Cord (3ft)	1 No.	1549
15.	Fibre Cable Laying		0
16.	Hard Digging	Per mtrs	316
17.	Soft Digging	Per mtrs.	172
18.	Internal Laying (in PVC pipe)	Per mtrs.	29
19.	Fibre LIU Box termination	1 No.	574
20.	Fibre Connector Termination	1 No.	918

Annexure IV

Format for HIMSWAN Connectivity

S. No.	Detail of the location where HIMSWAN	Details to be filled in by user
	connectivity is required	department
1.	Name of Department / Office	
2.	Address (where connectivity is required)	
3.	Name and designation of Nodal Officer for	
	HIMSWAN (including mobile number)	
4.	Telephone no. (at above mentioned address)	
5.	No. of Employees	
6.	No. of Servers	
	OS installed in Server (e.g. Windows 2003, Linux,)	
	Database being used (e.g. MS SQL, Oracle,)	
7.	No. of Computers	
	OG : . 11 1: PG (W' 1 00/WD 1:)	
0	OS installed in PCs (Windows 98/ XP, Linux,)	
8.	Whether LAN exists? (yes/ no)	
	If yes, then mention make & model of Switch/ Hub	
	installed and no. of ports	
9.	Current Applications being used	
10.	Any other Application to be used in near future	
11.	Existing Internet connection, if any (yes/ no)	
	If yes, then name of service provider	
	Type of connection (give bandwidth)	
12.	Estimated distance between office and nearest PoP	
13. *	Give your choice for connectivity as per Annexure-III	

[Si	ignature of competent authority]
Name and Designation:	

^{*} Final decision will be taken in consultation with SITEG