Network architecture proposal for the new engineering building

Computer Networks I - June 2024

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SCHEDULE
MARCH - APRIL

Review of Plans and Architectural Design

1 - 7
MARCH

8 - 14
MARCH

Identification and Distribution of Spaces

Evaluation of Specialized Network Software

15 - 21
MARCH

22 - 8
MARCH-APRIL

Initial Requirements Gathering

Technical Analysis of Requirements

9 - 15
APRIL

SCHEDULE
APRIL - MAY

Requirements Prioritization

16 - 24
APRIL

25 - 7
APRIL - MAY

Continuous Requirements Refinement

Development of the Conceptual Network Model

8 - 14
MAY

15 - 21
MAY

Design of Specific Models for Each Space

Integration of Specific Models into a General Prototype

22 - 9
MAY - JUNE

SCHEDULE
JUNE

Network Model Configuration in the Software

13 - 22 JUNE

10 - 12 JUNE

Simulation Software Selection

23 - 31 JUNE

Running Simulations

COMPARATIVE PRICE FOR ROUTER WITH DIFFERENT BRAND

Routers			
Brand	**Model**	**Price (US)**	**Price (COP)**
Cisco	ISR4431/K9	$6,975.00	$27,900,000
Hewlett Packard Enterprise	JM044A HPE FlexNetwork MSR3620-DP	$4,528.08	$18,112,320
Huawei	AR 2200 Series	$3,262.00	$13,048,000
Juniper Networks	Juniper Networks SRX340	$3,256.23	$13,024,920

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COMPARATIVE PRICE FOR SWITCHES WITH DIFFERENT BRAND

Switches			
Brand	**Model**	**Price (US)**	**Price (COP)**
Cisco	CBS250-24P-4G Smart Switch	$484.00	$1,936,000
NetGear	GS724TP	$420.00	$1,680,000
HP	1930 Series	$449.99	$1,799,960
TP-Link	TL-SG3428MP	$388.00	$1,552,000

COMPARATIVE PRICE FOR REPEATERS WITH DIFFERENT BRAND

Repeaters			
Brand	**Model**	**Price (US)**	**Price (COP)**
Ruckus	9U1-T300-US01	$299.99	$1,199,960
NetGear	WAX625PA	$289.00	$1,156,000
Ubiquiti	UAP-AC-LITE	$130.00	$520,000
TP-Link	EAP660 HD	$199.99	$799,960

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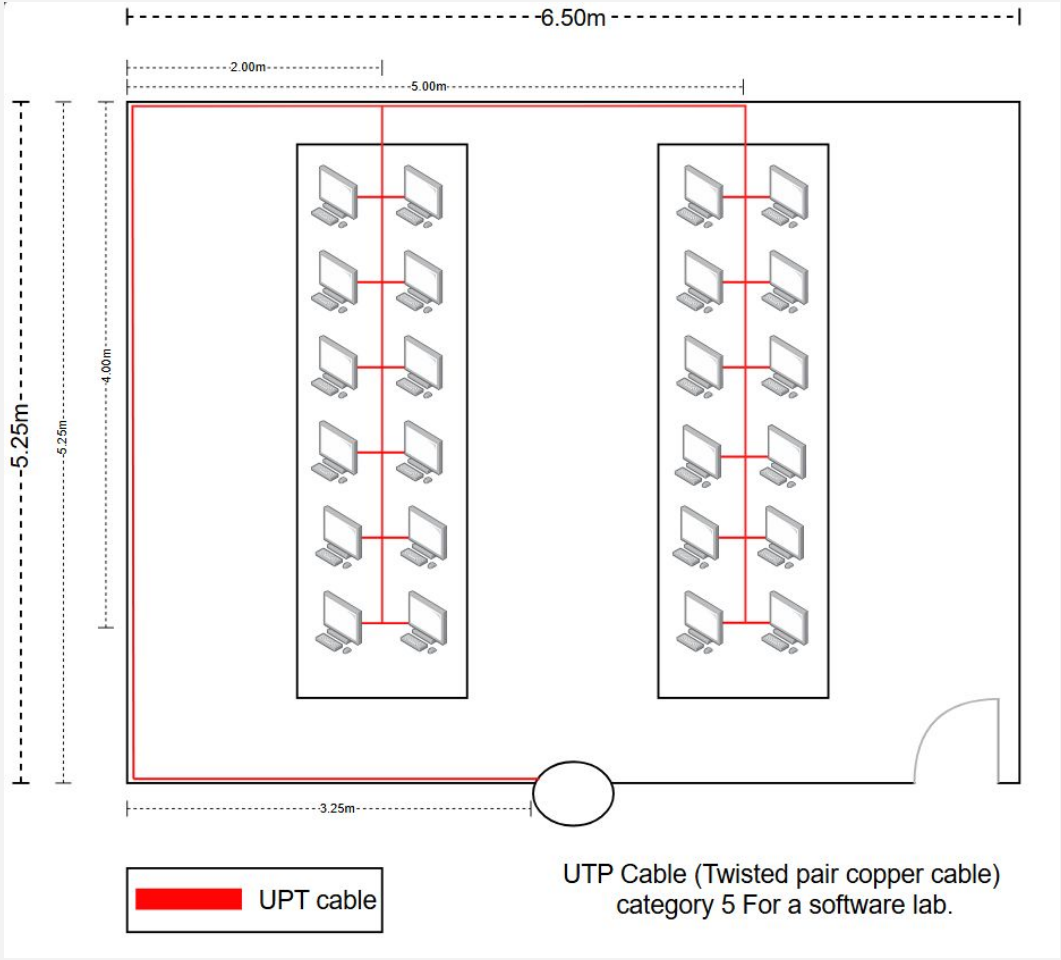
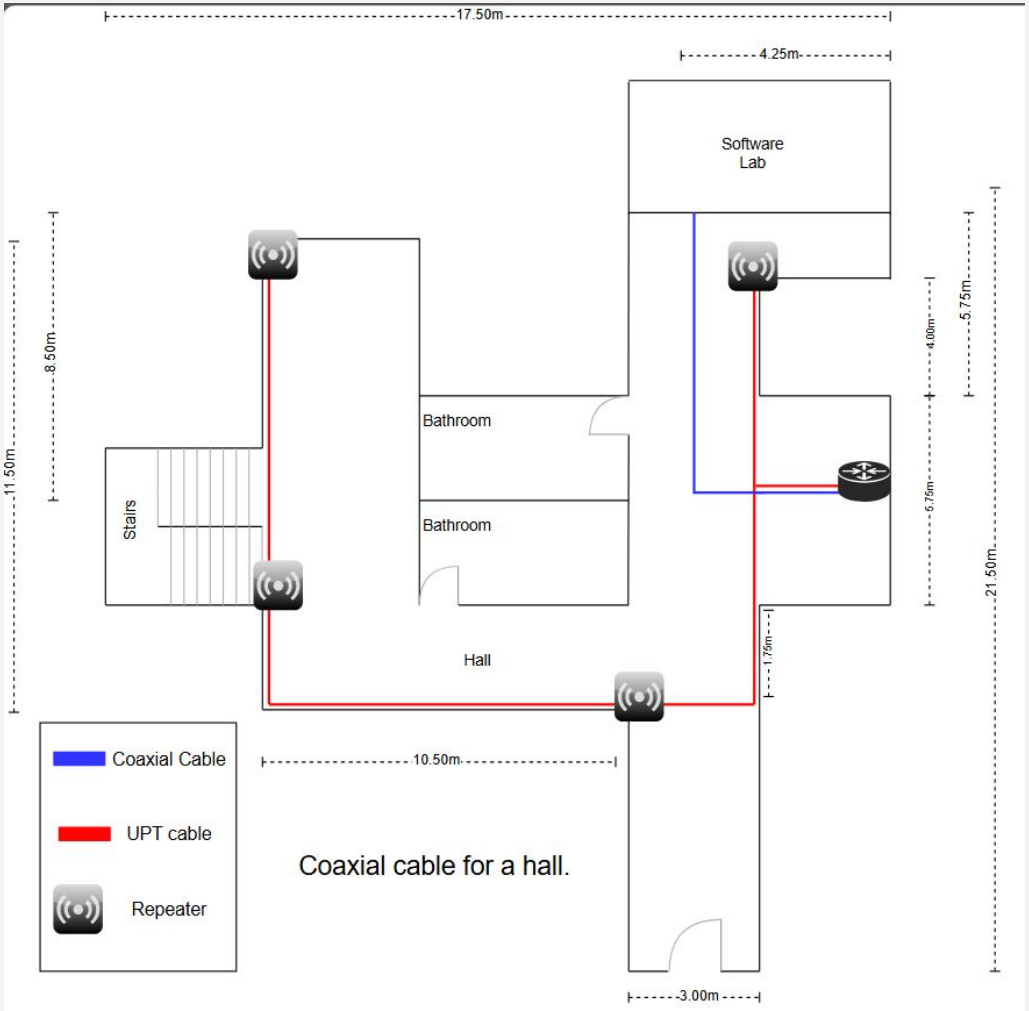
COST ESTIMATION



COST ESTIMATION



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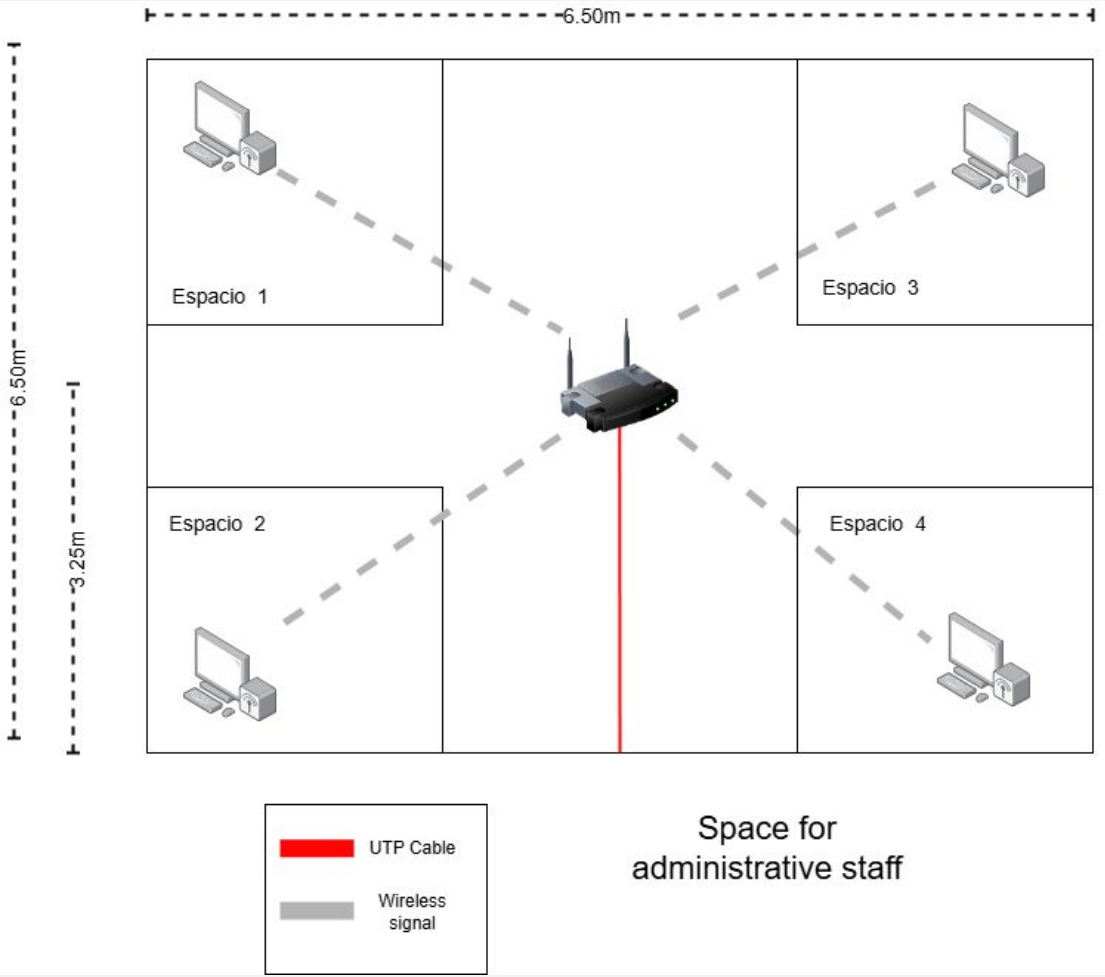
COST ESTIMATION



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EQUIPMENT AND CABLE PRICE

Device	Model	Quantity	Unitary Cost (US$)	Total (US$)	Price in Colombian Pesos
Router	Juniper Networks SRX340	1	$3,256.23	$3,256.23	$13,024,920
Switch	TL-SG3428MP	15	$388.00	$5,820.00	$23,280,000
Repeater	UAP-AC-LITE	68	$130.00	$8,840.00	$35,360,000
Cable Coaxial	Cable Coaxial Rg6 1 Blanco D-90182	195	$2.77	$540.15	$2,160,600
Cable UTP	Cable Utp Cat 7 Ethernet	4785	$2.00	$9,570.00	$38,280,000
Rack patch panel	Rapink	11	$47.40	$521.40	$2,085,600
Wireless router	Cisco-Linksys WRT300N	4	$159.95	$639.80	$2,559,200

The total cost for equipment and cable:

$133,822,320 COP

ROLES AND AVERAGE SALARY

Role Name	Salary (COP)	Quantity	Contracted Months	Total Salary
Network architect	$8,349,927	1	1	$8,349,927
Network engineer	$5,768,478	1	4	$23,073,912
Network Security Specialist	$3,500,000	2	1	$7,000,000
Network Support Technician	$1,320,232	5	4	$26,404,640
Specialist in telecommunications	$3,491,160	1	2	$6,982,320

The total cost for roles and average salary:

$71,810,799 COP

The total cost for the new engineering faculty building is:

$205,633,119 COP

THANKS