



P25 Division

Agenda

Contract Highlights

System Overview

Progress Made

Upcoming Schedule

P25 Benefits



P25 Division

Contract Highlights

- Contract signed for \$122,916.70 less than proposal
- 50 days of training for all technicians that includes the P25 Master Technician Course
- 3 Year Warranty that starts upon final acceptance
- Software & Firmware upgrades to the latest version at the end of the warranty period and will include required hardware upgrades at no additional cost
- 6 Harris Technicians will be co-located in UCA service shops during the warranty period
- End-User radio discounts from 40-65% off the list price for quantities purchased before system acceptance



P25 Division

System Overview

- P25 Phase-2 IP Trunked System Radio Communications System
- The UCA solution will consist of **four** IP based VIDA Cores with back-ups
 - 1 x VIDA Premier Core
 - 2 x VIDA Premier Connect Cores + **1 Additional Premier Connect Core**
- Connected to the four VIDA cores will be a total of:
 - **144** MASTR V-based RF sites
 - 119 Original Sites + **25 Additional Sites**
 - 89 trunked, multicast sites + **28 Additional multicast sites**
 - **8+1** simulcast cells (**30-3** sites)



P25 Division

System Overview

- 9 simulcast cells (27 sites)



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Multicast Site: **Sundance**
 - Weber Simulcast Cell – **3** Sites (Ogden Public Safety, Rocky Point, South Ogden)



P25 Division

System Overview Continued

- DCP (Distributed Control Point) Technology
- Frequency: **700 MHz**
- **224** Symphony Dispatch Consoles (180 Original + **44 Additional Consoles**)
 - (177+**43** active & 3+**1** training/spares)
- 560 conventional (4-wire) interfaces
- 1 centralized logging recorder
- VIDA Interop Gateways & Encompass Gateways
- ISSI (Inter Sub System Interface)
 - Interconnection with 1 external P25 system with 20 concurrent talk paths
- BeOn Gateway Server
 - 10 Client Application Licenses



P25 Division

Progress Made





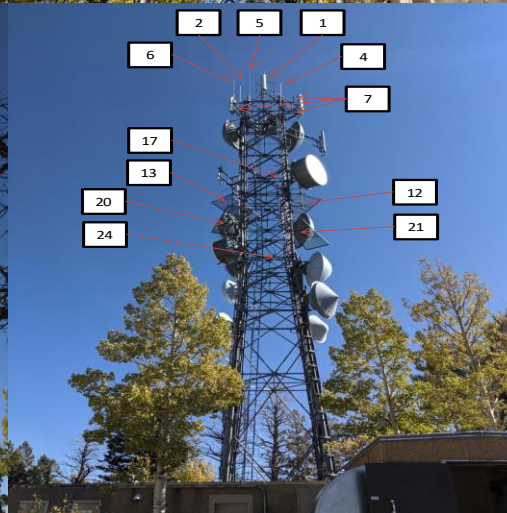
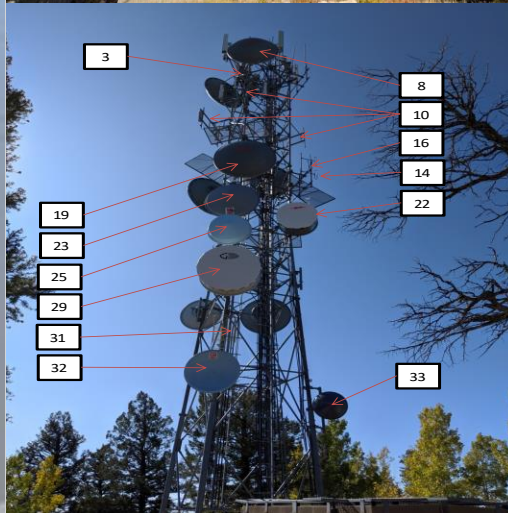
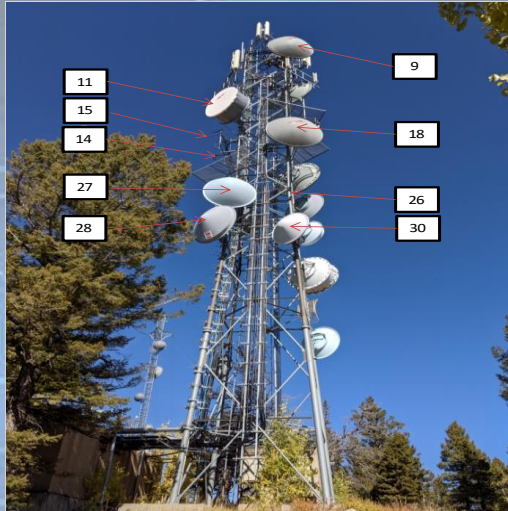
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Site Surveys



Tower Mapping

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	Tower Leg / Face	Height	Antenna Type & Mount Type or Description
1	CD	120	20-ft ±, 4-Element Dipole, Pipe Mount
2	A	120	8-ft Omni Antenna, Leg Mount
3	B	120	10-ft Omni Antenna, Leg Stand off mount
4	C	120	Omni Antenna, Antel BCD-80010, Standoff Mount
5	D	120	Omni Antenna, Antel BCD-80010, Standoff Mount
6	D	120	Omni Antenna, Sector Mount
7	A,B,C	118	(6) #-ft Sector Antennas, Sector Mount
8	A	116	10-ft ± Ø Microwave Antenna, Leg Mount, And
9	B	115	10-ft ± Ø Microwave Antenna, Leg Mount, And
10	A,B,C	98	(5) #-ft Sector Antennas, Sector Mount
11	C	94	10' Andrew Dish, Leg Pipe Mount
12	B	84	12' X 5' Ice Shield, Leg Mount
13	A	82	12' X 5' Ice Shield, Leg Mount
14	CD	79	2-Element Dipole Antenna, Sector Mount
15	CD	79	(2) Yagi Antenna, Sector Mount
16	CD	79	(2) Yagi Antenna, Sector Mount
17	CD	79	8-ft Omni Antenna, Sector Mount
18	B	79	10-ft ± Ø Microwave Antenna, Leg Mount, And
19	A	77	10-ft ± Ø Microwave Antenna, Leg Mount, And
20	D	65	12' X 5' Ice Shield, Leg Mount
21	C	64	12' X 5' Ice Shield, Leg Mount
22	A	63	8-ft ± Ø Microwave Antenna, Pipe Mount
23	D	61	6-ft ± Ø Microwave Antenna, Pipe Mount
24	CD	59	4-ft Yagi Antenna, Pipe Mount
25	A	57	4-ft ± Ø Microwave Antenna, Pipe Mount
26	B	57	1.5-ft Omni Antenna, Pipe Mount (upside down)
27	C	57	6-ft ± Ø Microwave Antenna, Pipe Mount
28	C	50	6-ft ± Ø Microwave Antenna, Pipe Mount, RFS
29	B	50	10-ft ± Ø Microwave Antenna, Pipe Mount, Ga
30	A	49	4-ft ± Ø Microwave Antenna, Pipe Mount
31	A	35	6-ft ± Grid Antenna, Pipe Mount
32	A	32	6-ft ± Ø Microwave Antenna, Pipe Mount, RFS
33	D	30	3-ft ± Ø Microwave Antenna, Pipe Mount

A - Leg is Northeast

B - Leg is Southwest

C - Leg is Southwest

D - Leg is Northwest

AB - Face is Northeast

BC - Face is Southeast

CD - Face is Southwest

DA - Face is Northwest

Tower Structural Analysis



Project Number: U3574-101-201

March 13, 2020

Ronald C. Clements
P25 Director
NPSPAC Region 41 Chairperson
700 Millz Region 41 RPC Chairperson
5215 Wiley Post Way, Suite 550
Salt Lake City, Utah 84116

REFERENCE: Cal Mountain
41° 47' 3" North & -112° 13' 58" West, Box Elder County, UT
Structural Analysis of Existing Tower for Proposed Loading Modifications
UCA P25 Radio Communications Upgrade Project

Dear Mr. Clements,

On behalf of L3 Harris Technologies and per your request, we have completed a feasibility study and have analyzed the known strengths of the existing guyed tower for the proposed antenna and auxiliary equipment modifications. It is our understanding that the proposed loading modifications include the addition of (1) omni antenna and (1) amplifier to the tower, and that all existing equipment will remain. The following is a summary of our analysis and conclusions.

SUMMARY OF RESULTS:

Table 1: Tower Results

Component	Loading	Demand-Capacity Ratio ¹	Result
Tower	Proposed	4.35	Fail
Tower	Existing	4.18	Fail
Foundation ²	Proposed	1.41	Fail
Structure Rating ³		4.35	

- See Conclusions section below for a summary of analysis and results.
- Demand capacity ratio of 1.05 or less considered acceptable per TIA-222-G Section 15.6.3.
- Structure rating is the maximum demand-capacity ratio from all known tower components.
- Foundation demand-capacity ratio based on design reaction comparison.

DOCUMENTATION:

The following documentation was provided by the client for this analysis:

- UCA mapping spreadsheet of existing and proposed equipment provided to us by L3 Harris Technologies
- As-built tower configuration by Rohm and provided by L3 Harris Technologies (Dated: August 2, 2001, Drawing #: D010319)
- Foundation as-built drawings by Rohm and provided by L3 Harris Technologies (Dated July 19, 2001, Drawings # A011691-1 [Tower] & A011694-1 [Guys])





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Shelter Replacement / Relocate Legacy Equipment





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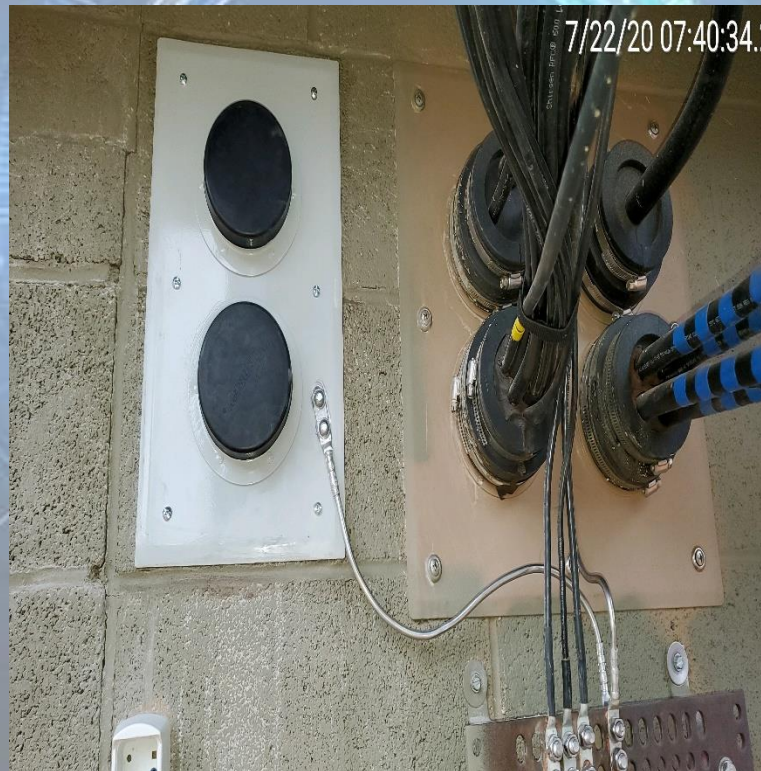
Consolidate Existing Equipment





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Transmission Line Entry Ports



Cable Trays





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Electrical Service Panels



Electrical Outlets





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Generators





P25 Division

HVAC Units





P25 Division

Ice Bridge / Ice Bridge Trapeze





P25 Division

Uninterrupted Power Supplies





P25 Division

DC Power Plants





P25 Division

Solar Panel Arrays



Grounding





P25 Division

Detail Design Approval

UTAH COMMUNICATIONS AUTHORITY

L3HARRIS

Jeremy Roe
Contracts Manager

L3Harris Technologies, Inc.
221 Jefferson Ridge Parkway
Lynchburg, VA 24501
jeremy.roe@l3harris.com
(434) 766-4082

June 5, 2020

Utah Communications Authority
Attn: Quinton J. Stephens, General Counsel/Deputy Director
5215 Wiley Post Way, Suite 550
Salt Lake City, Utah 84116
QStephens@uca911.org

Dear Quin:

Reference is made to that certain State of Utah Contract, dated June 7, 2019, as amended by Amendment No. 1, dated December 31, 2019 & Amendment No. 2, dated April 22, 2020 (the "Contract") between Utah Communications Authority ("UCA") and L3Harris Technologies, Inc. ("L3Harris").

The purpose of this letter is to request UCA's authorization to order the UCA-approved materials as of June 8, 2020 for UCA's selected 43 Project Sites as set forth in Attachment A to this letter (the "43-Site Material Order"). With respect to each site, the 43-Site Material Order will be completed in accordance with the UCA-approved materials and documentation identified specifically in the attached Schedules to Attachment A.

Please review the information provided and confirm your approval and authorization of the 43-Site Material Order by providing your signature to the Attachment A form herein and returning the completed form to my attention.

Sincerely,



By: Jeremy Roe
Contracts Manager, L3Harris Technologies, Inc.

Cc: Harold Clements (UCA)
Zeehan Chandhry (L3Harris)
JR Mann (L3Harris)

UTAH COMMUNICATIONS AUTHORITY

ATTACHMENT A

Authorization and Approval Form – UCA P25 Project

Request Information	
Today's Date:	6/5/2020
Name of Requestor:	Jeremy Roe
Work Details	
Purpose of Request:	UCA authorization and approval to complete the 43-Site Material Order as set forth herein at the 43 Project Sites.
Scope of Work:	The 43-Site Material Order will be completed in accordance with the UCA-approved materials and documentation identified specifically in the attached Schedules to Attachment A.
Duration:	June 8, 2020 – Nov 20, 2020
List of Sites and Materials	Please reference the Attachment A supplemental information and site-specific Schedules enclosed. Supplemental information <input checked="" type="checkbox"/> is <input type="checkbox"/> is not attached as part of Attachment A. (Check one).

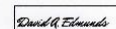
Approved for UCA:

By: _____

Name: _____

Title: _____

Date: _____



David A. Edmunds



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Upcoming Schedule

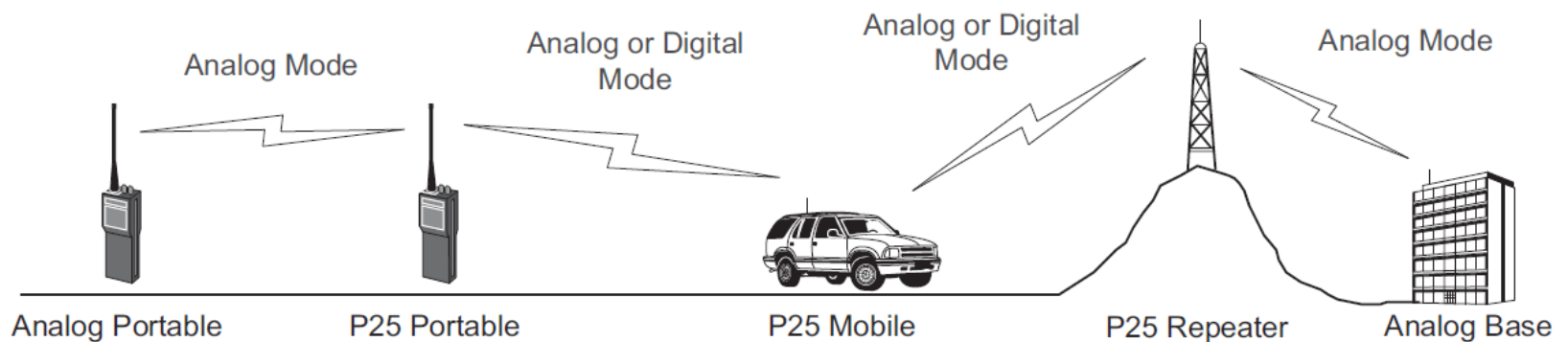
Detailed Design #2	5/4/20 – 11/13/20
Site Remediation	5/4/20 - 2/7/22
Equipment Production	5/26/20 – 2/12/21
(Round 1: 6 NSCs, 46 RF Sites, 3 Consoles)	
UCA Detailed Design Review #2	11/16/20 – 11/19/20
Factory Acceptance Test Round 1	12/14/20 – 2/10/21
Equipment Production	12/24/20 – 7/21/21
(Round 2: 42 RF Sites)	
Create Fleet Maps & Radio Personalities	2/17/21 – 4/13/21
P25 Radio System Install	2/16/21 – 5/16/23
VIDA Premier Install	2/16/21 – 2/24/21
Site # 1 Install	5/14/21 – 5/20/21
Factory Acceptance Test Round 2	7/2/21 – 7/20/21
Equipment Production	9/15/21 – 2/7/22
(Round 3: 31 RF Sites, 177 Consoles)	
Cutover / Migration	9/15/23 – 11/29/23



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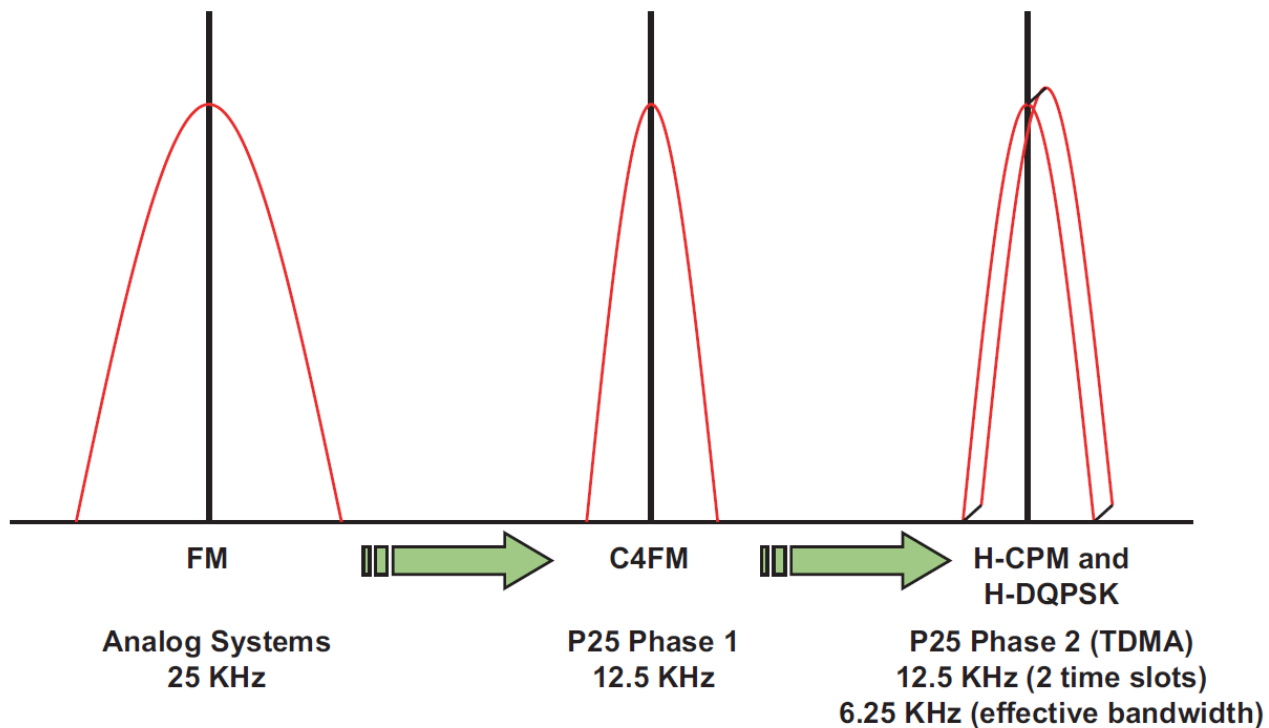
P25 Benefits

Interoperability
Multiple Vendors
Backwards Compatibility



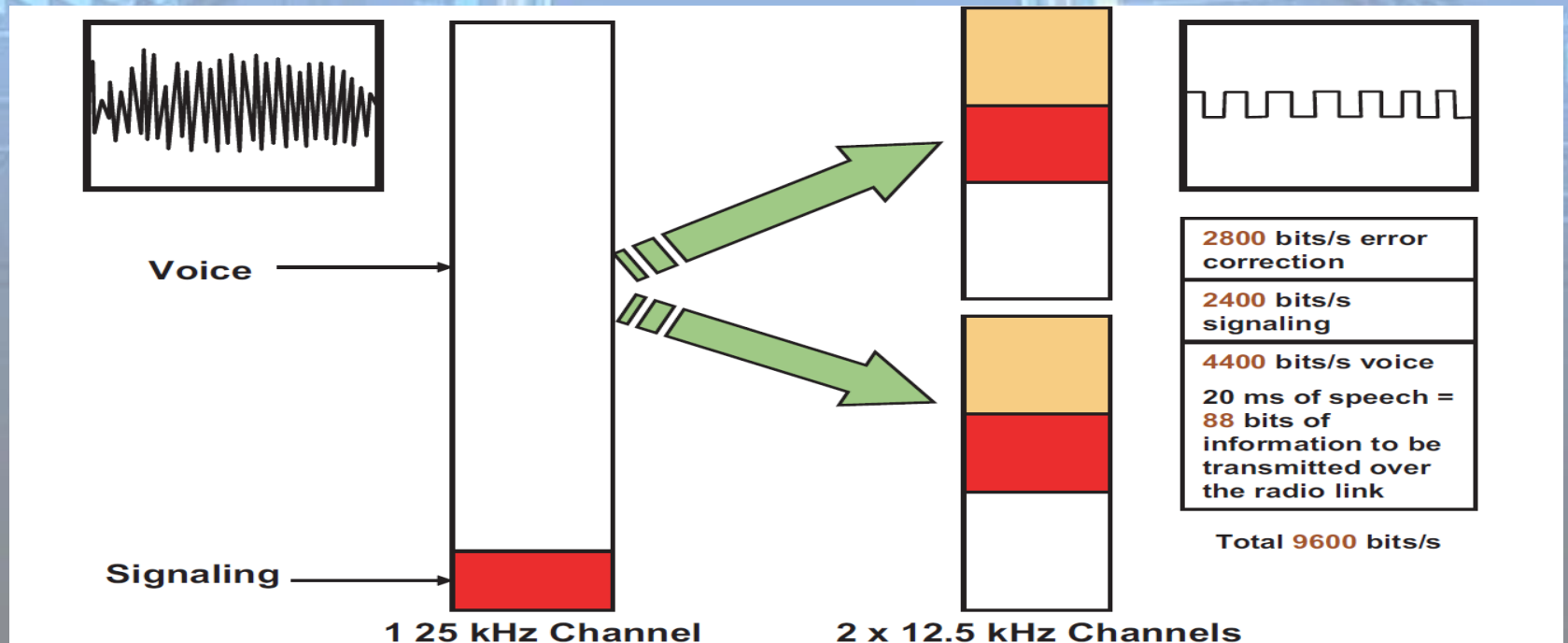
P25 Benefits continued

Spectrum Efficiency



P25 Benefits continued

Improved Audio Quality





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P25 Benefits continued

Enhanced Functionality



Harold Clements

hclements@uca911.org

801-633-2387

Questions

?

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