

"LIGHTHOUSE MODEL"
TRANSITION FROM ATSC 1.0 TO
ATSC 3.0
IN LOS ANGELES
by Francis Chao
fchao2@yahoo.com



Web location for this
presentation:

<http://aztcs.apcug.org>

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"Meeting Notes"

SUMMARY

The FCC has mandated that all existing ATSC 1.0 television channels that wish to upgrade to ATSC 3.0 are required to run both the existing ATSC 1.0 and new corresponding ATSC 3.0 channels until July 17, 2027. The cost-effective scheme to run both channels simultaneously is called "Lighthouse Model" transition.

FCC'S SIMULCAST MANDATE

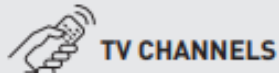
- <https://docs.fcc.gov/public/attachments/FCC-23-53A1.pdf>

FCC'S SIMULCAST MANDATE (continued)

- https://www.atsc.org/wp-content/uploads/2020/10/f-36-26-13322575_PAu3M4S9_WhitePaper_Lighthouse_TESTTREE_v2.pdf

Virtual "Displayed" Channels Prior to Lighthouse Transition in Los Angeles in 2021

**KCOP-TV
FOX
(RF CH. 13)**



**13.1 (ATSC1
="KCOP-DT")**

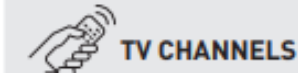
**13.2 (ATSC1
="BUZZR")**

**13.3 (ATSC1
="Movies!")**

**13.4 (ATSC1
="HEROES")**



**KCBS-TV
CBS
(RF CH. 31)**



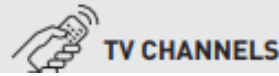
**2.1 (ATSC1
="KCBS-
HD")**

2.2 (ATSC1)

2.3 (ATSC1)

2.4 (ATSC1)

**KNBC
NBC
(RF CH. 36)**



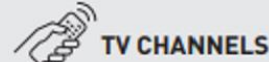
**4.1 (ATSC1
="NBC4-LA")**

4.2 (ATSC1)

4.3 (ATSC1)

4.4 (ATSC1)

**KTLA
(RF CH. 35)**



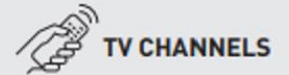
**5.1
(ATSC1="KT
LA-DT")**

5.2 (ATSC1)

5.3 (ATSC1)

5.4(ATSC1)

**KTTV
FOX
(RF CH. 11)**



**11.1 (ATSC1
="FOX 11")**

11.2 (ATSC1)

11.3 (ATSC1)

11.4 (ATSC1)

Relocation of ATSC 1.0 Virtual "Displayed" Channels Of the Lighthouse Station to Existing ATSC 1.0 TV Stations in Los Angeles in 2022

**KCOP-TV
FOX
(RF CH. 13)**



**KCBS-TV
CBS
(RF CH. 31)**



**KNBC
NBC
(RF CH. 36)**



**KTLA
(RF CH. 35)**



**KTTV
FOX
(RF CH. 11)**



**13.1 (ATSC1
="KCOP-DT")**

**13.2 (ATSC1
="BUZZR")**

**13.3 (ATSC1
="Movies!")**

**13.4 (ATSC1
="HEROES")**

**2.1 (ATSC1
="KCBS-
HD")**

2.2 (ATSC1)

2.3 (ATSC1)

2.4 (ATSC1)

**4.1 (ATSC1)
="NBC4-LA"**

4.2 (ATSC1)

4.3 (ATSC1)

4.4 (ATSC1)

5.1

**(ATSC1="KT
LA-DT")**

5.2 (ATSC1)

5.3 (ATSC1)

5.4(ATSC1)

**11.1 (ATSC1
="FOX 11")**

11.2 (ATSC1)

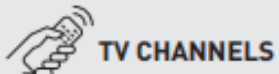
11.3 (ATSC1)

11.4 (ATSC1)

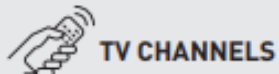
Relocation of ATSC 1.0 Virtual "Displayed" Channels Of the Lighthouse Station to Existing ATSC 1.0 TV Stations in Los Angeles in 2022

Identified
as future
Lighthouse

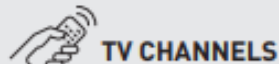
**KCOP-TV
FOX
(RF CH. 13)**



**KCBS-TV
CBS
(RF CH. 31)**



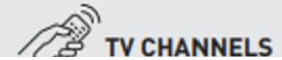
**KNBC
NBC
(RF CH. 36)**



**KTLA
(RF CH. 35)**



**KTTV
FOX
(RF CH. 11)**



~~13.1 (ATSC1)
="KCOP-DT"~~

~~13.2 (ATSC1)
="BUZZR"~~

~~13.3 (ATSC1)
="Movies"~~

~~13.4 (ATSC1)
="HEROES"~~

2.1 (ATSC1)
="KCBS-HD"

2.2 (ATSC1)

2.3 (ATSC1)

2.2 (ATSC1)
="BUZZR"

4.1 (ATSC1)
="NBC4-LA"

4.2 (ATSC1)

4.3 (ATSC1)

4.4 (ATSC1)

13.3 (ATSC1)
="Movies"

5.1 (ATSC1
="KTLA-DT"

5.2 (ATSC1)

5.3 (ATSC1)

5.4 (ATSC1)

13.1 (ATSC1)
="KCOP-DT"

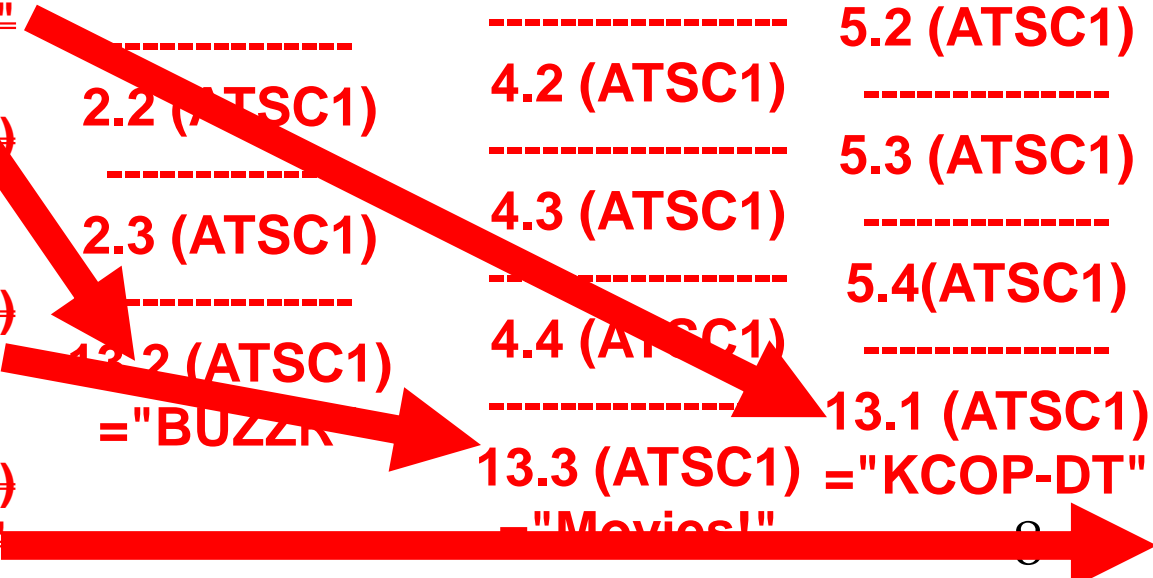
11.1 (ATSC1)
="FOX 11"

11.2 (ATSC1)

11.3 (ATSC1)


11.4 (ATSC1)

13.4 (ATSC1)
="HEROES"



Creation of ATSC 3.0 Simulcasted Virtual "Displayed Channels" at the Upgraded Lighthouse Station

Lighthouse
KCOP-TV
FOX
(RF CH. 13)




ATSC 3.0

KCBS-TV
CBS
(RF CH. 31)



ATSC 1.0

KNBC
NBC
(RF CH. 36)



ATSC 1.0

KTLA
(RF CH. 35)



ATSC 1.0

KTTV
FOX
(RF CH. 11)



ATSC 1.0

~~13.1 (ATSC1)~~
~~= "KCOP-DT"~~

~~13.2 (ATSC1)~~
~~= "BUZZR"~~

~~13.3 (ATSC1)~~
~~= "Movies"~~

~~13.4 (ATSC1)~~
~~= "HEROES"~~

2.1 (ATSC1)
 = "KCBS-HD"

 2.2 (ATSC1)

 2.3 (ATSC1)

 13.2 (ATSC1)
 = "BUZZR"

4.1 (ATSC1)
 = "NBC4-LA"

 4.2 (ATSC1)

 4.3 (ATSC1)

 4.4 (ATSC1)

 13.3 (ATSC1)
 = "Movies!"

5.1 (ATSC1)
 = "KTLA-DT"

 5.2 (ATSC1)

 5.3 (ATSC1)

 5.4 (ATSC1)

 13.1 (ATSC1)
 = "KCOP-DT"

11.1 (ATSC1)
 = "FOX 11"

 11.2 (ATSC1)

 11.3 (ATSC1)

 11.4 (ATSC1)

 13.4 (ATSC1)
 = "HEROES"

Virtual "Displayed" Channels After Lighthouse Transition in Los Angeles in 2022

Lighthouse

KCOP-TV
FOX
(RF CH. 13)



ATSC 3.0

 TV CHANNELS

KCBS-TV
CBS
(RF CH. 31)



ATSC 1.0

 TV CHANNELS


KNBC
NBC
(RF CH. 36)




ATSC 1.0

 TV CHANNELS

KTLA
(RF CH. 35)



ATSC 1.0

 TV CHANNELS

KTTV
FOX
(RF CH. 11)



ATSC 1.0

 TV CHANNELS

- 2.1 (ATSC3)**
="KCBS-NX"

- 4.1 (ATSC3)**
="KNBC-NX"

- 5.1 (ATSC3)**
="KTLA-HD"

- 11.1 (ATSC3)**
="KTTV-NX"

- 13.1 (ATSC3)**
="KCOP-NX"

- 2.1 (ATSC1)**
="KCBS-HD"

- 2.2 (ATSC1)**

- 2.3 (ATSC1)**

- 2.4 (ATSC1)**

- 13.2 (ATSC1)**
="BUZZR"

- 4.1 (ATSC1)**
="NBC4-LA"

- 4.2 (ATSC1)**

- 4.3 (ATSC1)**

- 4.4 (ATSC1)**

- 13.3 (ATSC1)**
="Movies!"

- 5.1 (ATSC1)**
="KTLA-DT"

- 5.2 (ATSC1)**

- 5.3 (ATSC1)**

- 5.4(ATSC1)**

- 13.1 (ATSC1)**
="KCOP-DT"

- 11.1 (ATSC1)**
="FOX 11"

- 11.2 (ATSC1)**

- 11.3 (ATSC1)**

- 11.4 (ATSC1)**

- 13.4 (ATSC1)**
="HEROES"

Virtual "Displayed" Channels After Lighthouse Transition in Los Angeles in 2022

Lighthouse
KCOP-TV
FOX
(RF CH. 13)



ATSC 3.0



TV CHANNELS

KCBS-TV
CBS
(RF CH. 31)




ATSC 1.0

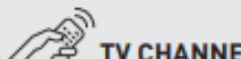


TV CHANNELS

KNBC
NBC
(RF CH. 36)



ATSC 1.0

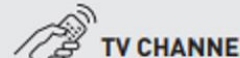


TV CHANNELS

KTLA
(RF CH. 35)




ATSC 1.0

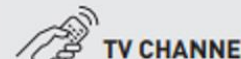


TV CHANNELS

KTTV
FOX
(RF CH. 11)



ATSC 1.0



TV CHANNELS

2.1 (ATSC3)
"KCBS-NX"

4.1 (ATSC3)
"KNBC-NX"

5.1 (ATSC3)
"KTLA-HD"

11.1 (ATSC3)
"KTTV-NX"

13.1 (ATSC3)
"KCOP-NX"

2.1 (ATSC1)
"KCBS-HD"

2.2 (ATSC1)

2.3 (ATSC1)

2.4 (ATSC1)

13.2 (ATSC1)
"BUZZR"

4.1 (ATSC1)
"NBC4-LA"

4.2 (ATSC1)

4.3 (ATSC1)

4.4 (ATSC1)

13.3 (ATSC1)
"Movies!"

5.1 (ATSC1)
"KTLA-DT"

5.2 (ATSC1)

5.3 (ATSC1)

5.4 (ATSC1)

13.1 (ATSC1)
"KCOP-DT"

11.1 (ATSC1)
"FOX 11"

11.2 (ATSC1)

11.3 (ATSC1)

11.4 (ATSC1)















13.4 (ATSC1)
"HEROES"













"ATSC" (continued)

- All of the "Type 2" unencrypted ATSC 3.0 channels and the "Type 3" encrypted ATSC 3.0 channels in Los Angeles as shown at <https://www.rabbitears.info/market.php> and <https://www.rabbitears.info/market.php?request=atsc3>

"ATSC" (continued)

- The pink shaded channels with the yellow padlock icon are **encrypted ATSC 1 "Type 3"** channels:

13	13	KCOP-TV	LOS ANGELES	CA		
<u>Display Channel</u>	<u>Physical Channel</u>	<u>Video</u>	<u>Audio</u>	<u>Call Sign</u>	<u>Network/Programming</u>	<u>Nickname</u>
02-1 	13.4 	1080p	DD5.1	KCBS NX	CBS 	"CBS Los Angeles"
04-1 	13.5 	1080p	DD2.0	KNBC NX	NBC 	"NBC 4"
05-1 	13.2	1080p	DD5.1	KTLA HD	CW 	"KTLA 5"
11-1 	13.1	1080p	DD5.1	KTTV NX	FOX 	"Fox 11"
13-1 	13.3	720p	DD5.1	KCOP NX	MyN 	"Fox 11 Plus"

13						
13						
KCOP-TV						
LOS ANGELES						
<u>Display Channel</u>	<u>Physical Channel</u>	<u>Video</u>	<u>Audio</u>	<u>Call Sign</u>	<u>Network</u>	
02-1 	13.4	 1080p	DD5.1	KCBS NX	CBS 	
04-1 	13.5	 1080p	DD2.0	KNBC NX	NBC 	
05-1 	13.2	1080p	DD5.1	KTLA HD	CW 	
11-1 	13.1	1080p	DD5.1	KTTV NX	FOX 	
13-1 	13.3	720p	DD5.1	KCOP NX	MyN 	

"ATSC" (continued)

- At the Mount Wilson tower site in the San Bernardino Mountains North of Los Angeles: Only KCOP-TV is transmitting an ATSC 3.0 signal. 2 out of 5 stations are in the "Type 3 Encrypted ATSC 3.0" format The remaining 3 are in the "Type 2 Unencrypted ATSC 3.0" format 1080p and DD5.1 are the highest video and audio resolutions in the Los Angeles area.

"ATSC" (continued)

- All of the other TV channels emanating from Mount Wilson are in the "Type 1 ATSC 1.0" format and they are shown at

<https://www.rabbitears.info/market.php>

without a green arrowhead.

All of these legacy television channels are transmitted at lower video and audio formats than the Type 2 unencrypted channels and the Type 3 encrypted channels.