

# T Z SAWYER TECHNICAL CONSULTANTS

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## DIGITAL LPTV FACILITY MINOR CHANGE APPLICATION

K29KU-LD

FCC FACILITY ID: 190345

BEND, OREGON

FEBRUARY 2023

### ENGINEERING NARRATIVE

#### Minor Change Application:

K29KU-LD seeks to modify its existing LICENSE permit (LMS: 0000121241) to specific a new transmission site and antenna system parameters. The proposed antenna is a KAT, "KAT-2X2 750 10210" horizontally polarized directional UHF panel antenna. A full-service filter mask is to be employed. The facility requested is not contingent upon a grant or channel move of any other known facility at the time of filing.

Maximum Effective Radiated Power (ERP) is 15-kilowatts, horizontal polarization only.

#### Modification Compliance:

Pursuant to 47 CFR §74.787(b) the instant application is considered a "minor" change because;

- There is no change in transmitting antenna location such that the protected service contour resulting from the change does not overlap some portion of the protected service contour of the authorized facility of the station license as illustrated in Figure 1, Present & Proposed Service Contours.
- There is no change in transmitting antenna location greater than 30 miles (48km) from the reference coordinates of the existing station construction permit antenna location, as noted below:

CALCULATED DISTANCE BETWEEN EXISTING LICENSE AND PROPOSED SITES

SITE	LAT (NAD83)	LON (NAD83)	(KM)	(MI)
CURRENT/EXISTING	44-16-49.90 N	121-32-17.50 W	25.99	16.15
PROPOSED LIC MOD	44-02-48.00 N	121-31-54.00 W		

#### FCC Tower Registration (ASR) 1040317 - FAA Notification:

The proposed antenna mounting structure is 98.5 meter in overall height above ground level (AGL) and has been issued a Antenna Structure Registration (ASR) number 1040317 by the Commission's Wireless Bureau. This is an existing communication tower that does not require further FAA notification as no changes in the supporting structure is required. The antenna is to be side-mounted on the structure at the 48-meter AGL level.

Antenna Elevations:

The ground elevation at the site is 1784.0 meters above mean sea level (AMSL). The center of radiation of the proposed antenna is 48.0 meters above ground level (AGL). Thus, the center of radiation is 1832.0 meters above mean sea level (AMSL), as tabulated below:

ALL ELEVATIONS IN METERS

GROUND ELEVATION	1784.0
SUPPORTING STRUCTURE OVERALL HEIGHT AGL	98.5
ANTENNA HEIGHT AGL	48.0
ANTENNA RCAMSL	1832.0

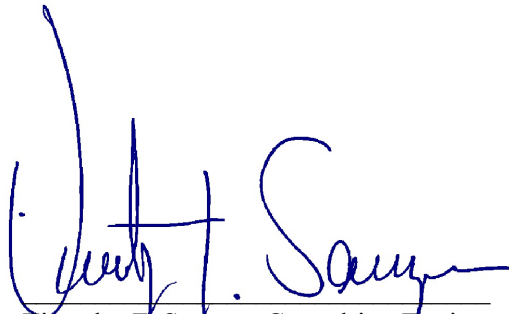
FCC TVStudy Results:

The results of a interference study of the proposal using the FCC TVStudy program (Version 2.2.5), shows that no prohibitive interference will occur from the proposal. A copy of the summary report has been included in this application. The applicant accepts any incoming interference that is predicted to exist to the proposed facility by any authorized or pending, primary or secondary TV station at the time this application is submitted.

Environmental Evaluation Statement:

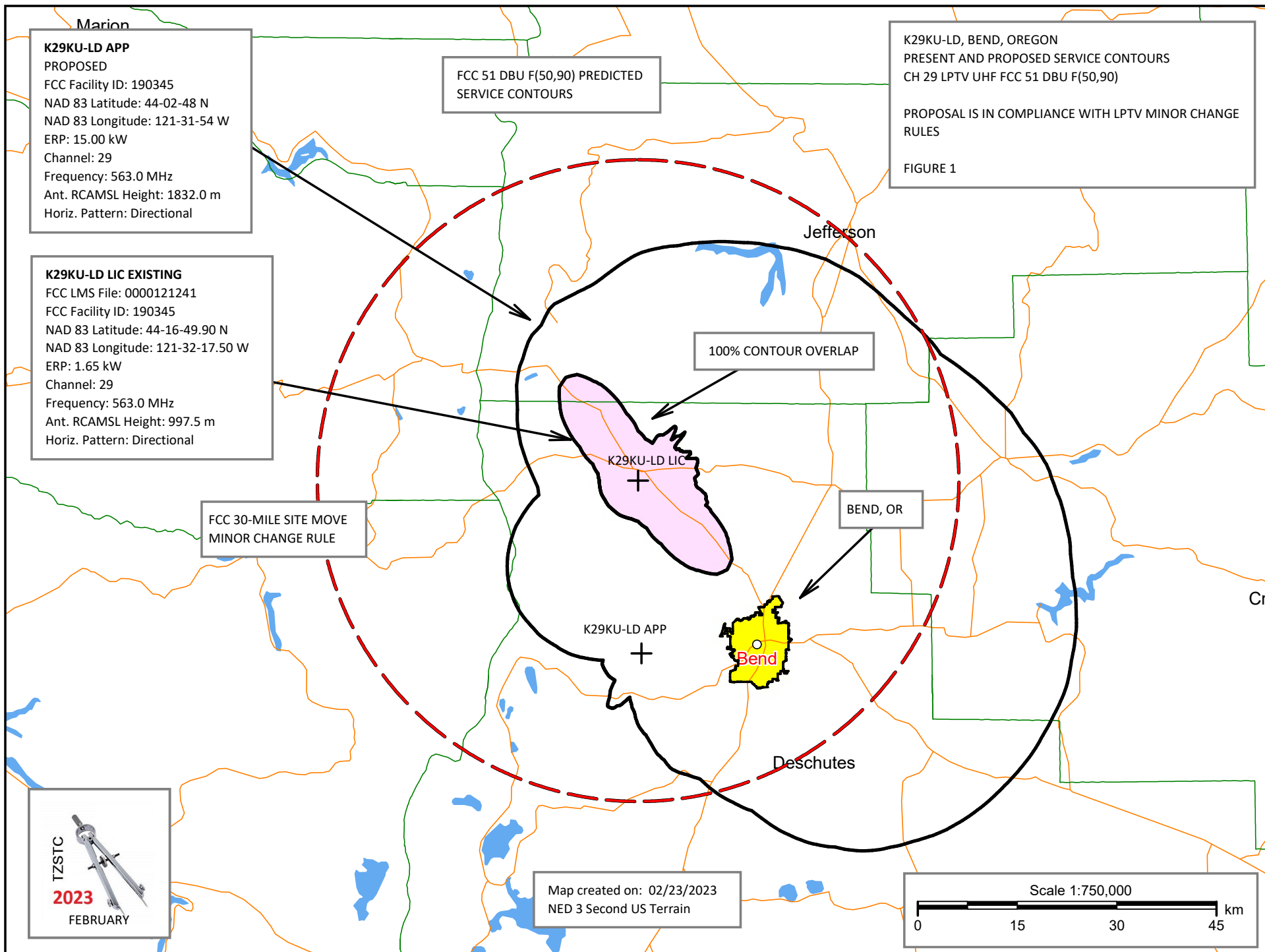
The environmental evaluation statement concerning this proposal has been included in this application and can be found as a separate file upload within the application. A grant of this proposal would NOT be an action which would have a significant environmental effect as demonstrated in the environmental evaluation statement.

February 23, 2023



Timothy Z. Sawyer, Consulting Engineer

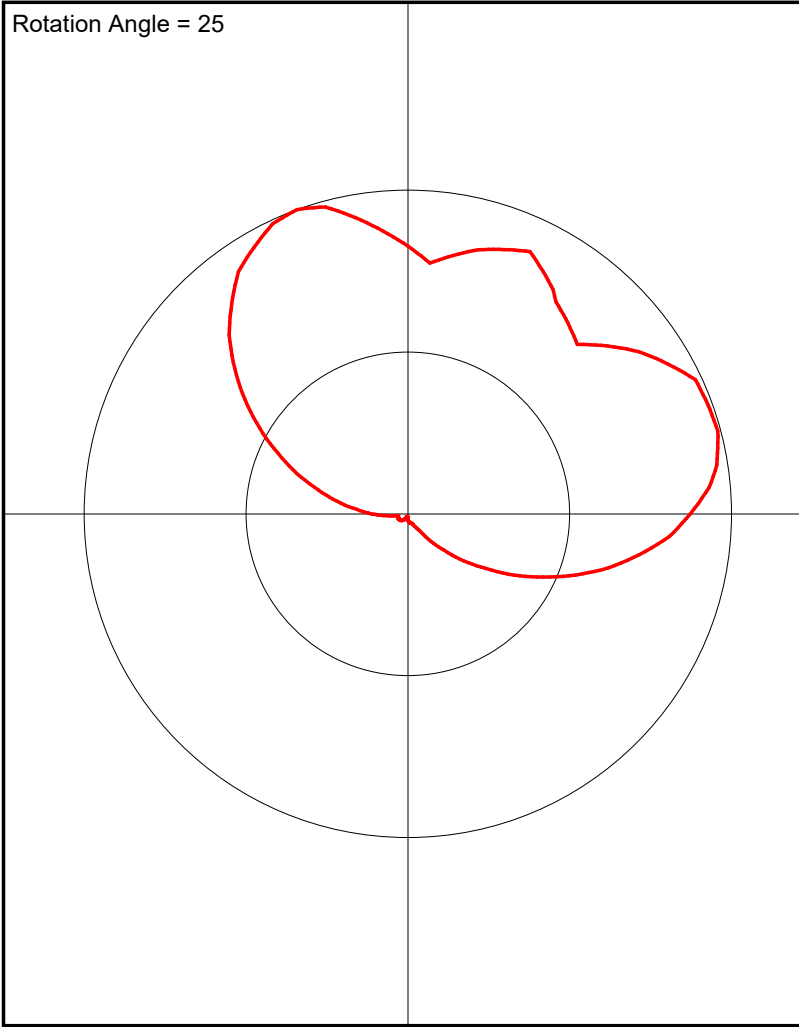
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KAT 2X2 750 10210 K29KU-LD ANT PATTERN

Pre-Rotation Antenna Pattern....

Azimuth (deg)	Relative Field
0.0	0.893
10.0	0.798
20.0	0.74
30.0	0.872
40.0	0.98
50.0	0.991
60.0	0.934
70.0	0.81
80.0	0.642
90.0	0.462
100.0	0.294
110.0	0.159
120.0	0.062
130.0	0.033
140.0	0.03
150.0	0.024
160.0	0.015
170.0	0.008
180.0	0.014
190.0	0.023
200.0	0.029
210.0	0.032
220.0	0.033
230.0	0.034
240.0	0.065
250.0	0.159
260.0	0.286
270.0	0.442
280.0	0.614
290.0	0.78
300.0	0.912
310.0	0.988
320.0	0.981
330.0	0.876
340.0	0.777
350.0	0.844
EXTRA BEARING	
315.0	1.000



# Figure 3 K29KU-LD MINOR CHANGE APP - FCC TVSTUDY SUMMARY REPORT

CELL SIZE 1.0 KM

PROFILE SPACING 1.0

Study build station data: LMS TV 2023-02-22

Proposal: K29KU-D D29 LD APP BEND, OR  
 File number: K29KU APP BEND OR  
 Facility ID: 190345  
 Station data: User record  
 Record ID: 686  
 Country: U.S.

Build options:

Protect pre-transition records not on baseline channel

Stations potentially affected by proposal:

IX	Call	Chan	Svc	Status	City, State	File Number	Distance
Yes	K28MH-D	D28	LD	LIC	BEND, OR	BLANK0000165597	47.2 km
Yes	K28MH-D	D28	LD	CP	BEND, OR	BLANK0000177436	47.2
No	K28QU-D	D28	LD	CP	EUGENE, OR	BNPDTL20090825BFA	126.1
No	KVAL-TV	D28	DT	CP	EUGENE, OR	BLANK0000156960	126.7
No	K28QR-D	D28	LD	LIC	LA PINE, OR	BLANK0000152575	44.8
Yes	K28OV-D	D28	LD	LIC	MADRAS, OR	BLANK0000063058	66.4
No	K28KI-D	D28	LD	LIC	ROSEBURG, OR	BLDTL20130710ACC	170.0
No	KECA-LD	D29	LD	LIC	EUREKA, CA	BLDTL20130211ACK	419.8
No	K29KR-D	D29	LD	LIC	CAMAS VALLEY, OR	BLDTT20121025ABP	215.0
No	K29NI-D	D29	LD	LIC	CAVE JUNCTION, OR	BLANK0000068674	263.3
No	KEPB-TV	D29	DT	LIC	EUGENE, OR	BLEDT20050127AHY	126.7
No	K29JN-D	D29	LD	LIC	GOLD BEACH, OR	BLDTT20110513AAO	294.0
No	KDKF	D29	DT	LIC	KLAMATH FALLS, OR	BLCDT20080215APO	216.9
No	K29EL-D	D29	LD	LIC	LA GRANDE, OR	BLDTT20120625ABJ	331.3
No	K29EG-D	D29	LD	LIC	MILTON, ETC, OR	BLDTT20101122AJO	324.9
No	K29AZ-D	D29	LD	LIC	NEWPORT, OR	BLDTT20111208ABT	215.0
No	K29LL-D	D29	LD	LIC	PHOENIX, TALENT, OR	BLANK0000064257	218.1
No	KOPB-TV	D29	LD	LIC	PORTLAND, OR	BLANK0000149856	185.4
No	KJYY-LD	D29	LD	LIC	PORTLAND, OR	BLANK0000165307	176.0
No	KJYY-LD	D29	LD	CP	PORTLAND, OR	BLANK0000189508	188.9
No	K29LW-D	D29	LD	LIC	ROCKAWAY BEACH, OR	BLANK0000063315	267.5
Yes	K29NO-D	D29	LD	LIC	THE DALLES, OR	BLANK0000068895	187.9
No	K29IA-D	D29	LD	LIC	CENTRALIA, ETC., WA	BLDTT20090618ABC	303.2
No	K29IB-D	D29	LD	LIC	GRAYS RIVER, ETC., WA	BLDTT20100511ACN	311.4
No	KRLB-LD	D29	LD	CP	RICHLAND, ETC, WA	BLANK0000029420	298.7
No	KRLB-LD	D29	LD	LIC	RICHLAND, ETC, WA	BLANK0000196526	298.7
Yes	KCYU-LD	D29	LD	LIC	YAKIMA, WA	BLANK0000072828	287.3
No	KOAB-TV	D30	LD	LIC	BEND, OR	BLEDT20111104AIS	83.3
No	K30OC-D	D30	LD	LIC	COTTAGE GROVE, OR	BLANK0000063681	124.7
No	K30JT-D	D30	LD	LIC	LA PINE, OR	BLANK0000152579	44.8
No	KPDX	D30	DT	LIC	VANCOUVER, WA	BLANK0000107795	190.0
No	K32CC-D	N32	TX	LIC	MONTGOMERY RANCH,ETC, OR	BLTT19881013IC	19.4
No	DK33AG	N33	TX	APP	BEND, OR	BLTTL19871223ID	16.4

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D29  
 Mask: Full Service  
 Latitude: 44 2 48.00 N (NAD83)  
 Longitude: 121 31 54.00 W  
 Height AMSL: 1832.0 m  
 HAAT: 0.0 m  
 Peak ERP: 15.0 kW  
 Antenna: KAT-2x2 750 10210 25.0 deg  
 Elev Pattn: Generic

50.2 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	10.2 kW	439.3 m	61.1 km
45.0	8.21	606.4	64.8
90.0	11.4	576.4	66.0
135.0	0.379	473.7	42.2
180.0	0.006	194.4	12.1

225.0	0.013	21.2	6.0
270.0	0.188	-75.8	11.5
315.0	9.13	-77.8	27.8

Database HAAT does not agree with computed HAAT  
Database HAAT: 0 m    Computed HAAT: 270 m

Distance to Canadian border: 489.1 km

Distance to Mexican border: 1321.5 km

Conditions at FCC monitoring station: Ferndale WA  
Bearing: 352.2 degrees    Distance: 551.2 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:  
Bearing: 102.3 degrees    Distance: 1407.7 km

Study cell size: 1.00 km

Profile point spacing: 1.00 km

Maximum new IX to full-service and Class A: 0.50%  
Maximum new IX to LPTV: 2.00%

Proposal causes 0.06% interference to BLANK0000165597 LIC scenario 1  
Proposal causes no interference to BLANK0000177436 CP  
Proposal causes no interference to BLANK0000063058 LIC  
Proposal causes 0.01% interference to BLANK0000068895 LIC scenario 1  
Proposal causes no interference to BLANK0000072828 LIC

---- Below is IX received by proposal K29KU APP BEND OR ----

Proposal receives 0.30% interference from scenario 2

No IX check failures found.

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K29KU-LD  
LPTV CHANNEL 29 OPERATION  
FACILITY ID: 190345  
BEND, OREGON  
FEBRUARY 2023

## ENVIRONMENTAL EVALUATION STATEMENT

A grant of this proposal would NOT be an action which would have a significant environmental effect as demonstrated in this environmental evaluation statement. Any changes in equipment, or construction, if necessary will not trigger any event with regards to Section 106 of the National Historical Preservation Act (NHPA).

The proposal does not meet any of the criteria specified in Section 1.1307 of the FCC Rules. More specifically, the proposed facilities are not known to fall within any of the categories enumerated in Sections 1.1307(a)(1)-(7) and will not involve the use of high intensity white lights. Furthermore, operation of the proposed facility will not involve the exposure of workers or the general public to levels of radio frequency electromagnetic fields exceeding guidelines adopted by the Federal Communications Commission. (The current FCC guidelines are based upon criteria contained in the National Council of Radiation Protection and Measurements (NCRP) Report No.86 (1986) and ANSI/IEEE C95.1-1992.)

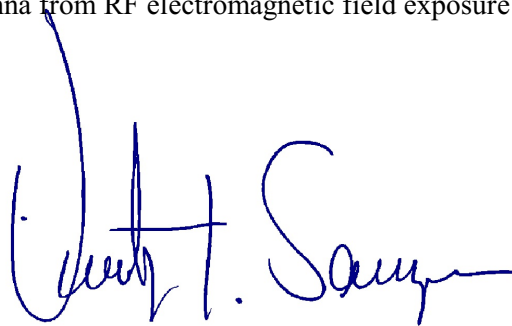
CALCULATED POWER DENSITY AT 2 METERS AGL (0.5 ANTENNA RELATIVE FIELD VALUE) ERP MAX (H ONLY)

CR AGL 48.0 M ERP MAX 15.0 KW	MPE ( $\mu\text{W}/\text{CM}^2$ )	CALCULATED VALUE ( $\mu\text{W}/\text{CM}^2$ )	% OF MPE	PASS/FAIL
CONTROLLED AREA	1866.7	59.1919	3.17%	PASS
PUBLIC AREA	373.3		15.86%	PASS

The general public will not be exposed to RF levels attributable to the proposal in excess of the FCC's guidelines. RF exposure warning signs are posted at the site. The applicant will coordinate exposure procedures with any co-located facilities and will reduce power or cease operation as necessary to protect persons having access to the site, tower, or antenna from RF electromagnetic field exposure in excess of FCC guidelines.

February 23, 2023

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