

# PL 772 License Surrender Report

Parts of blocks 2/1 and 2/2

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## License surrender report PL 025B

Reference is made to the letter sent to MPE dated 21.12.2017 (our reference: AU-EXP NUKE ANS-00069) regarding the surrender of production license 772 (PL 772). This report outlines the key license history, database, prospects and evaluations of PL 772 and fulfills the requirement by the NPD for a license status report.

### 1 KEY LICENSE HISTORY

Production license 772 is located in block 2/1 and 2/2, across the western margin of the Sørvestlandet High and the Cod Terrace (Figure 1.1). The license was awarded on 06.02.2015 through the 2014 APA award. Statoil Petroleum AS was awarded the operatorship with 50 % equity, with Total E&P Norge as a partner with 50% share. Work obligations were G&G work and decide on a Drill or Drop within 06.02.2017. The Drill or Drop decision was postponed to 06.02.2018 after Statoil applied for an extension in order to evaluate a newly licensed 3D survey. Total E&P Norge decided to leave the license in February 2017, leaving Statoil Petroleum AS with an 100% equity.

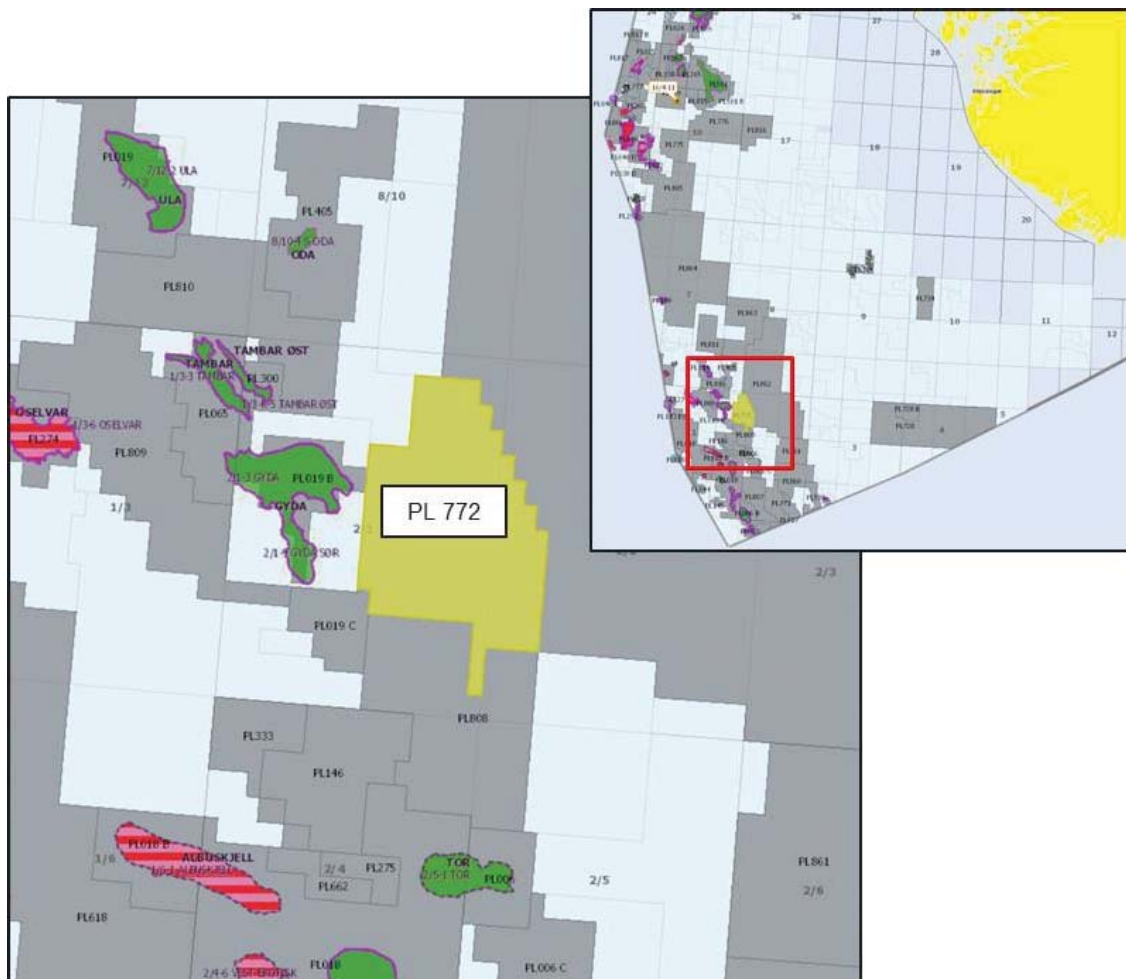


Figure 1.1 – Location map for PL 772 in the North Sea

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## Work commitment

Work obligations were to:

- G&G work: 06.02.2017
- Drill or Drop Decision: 06.02.2018
- BoK: 06.02.2020
- BoV: 06.02.2021
- PDO: 06.02.2022

## Management and Exploration committee meetings

The following Management and Exploration committee meetings have been held:

- 17.04.2015: MC/EC meeting
- 30.10.2015: EC meeting
- 13.11.2015: MC meeting
- 14.09.2016: EC meeting
- 24.11.2016: MC meeting

## Reasons for license surrender

The Othello prospect is the main prospect identified in the license. It consists in a western and eastern segment. The chance of success is low due to a high migration risk (0.1). The overall risk figure was not impacted by the additional work conducted in 2017, despite a clear interpretation uplift from the PGS16M02 survey.

## 2 DATABASE

### 2.1 Seismic data

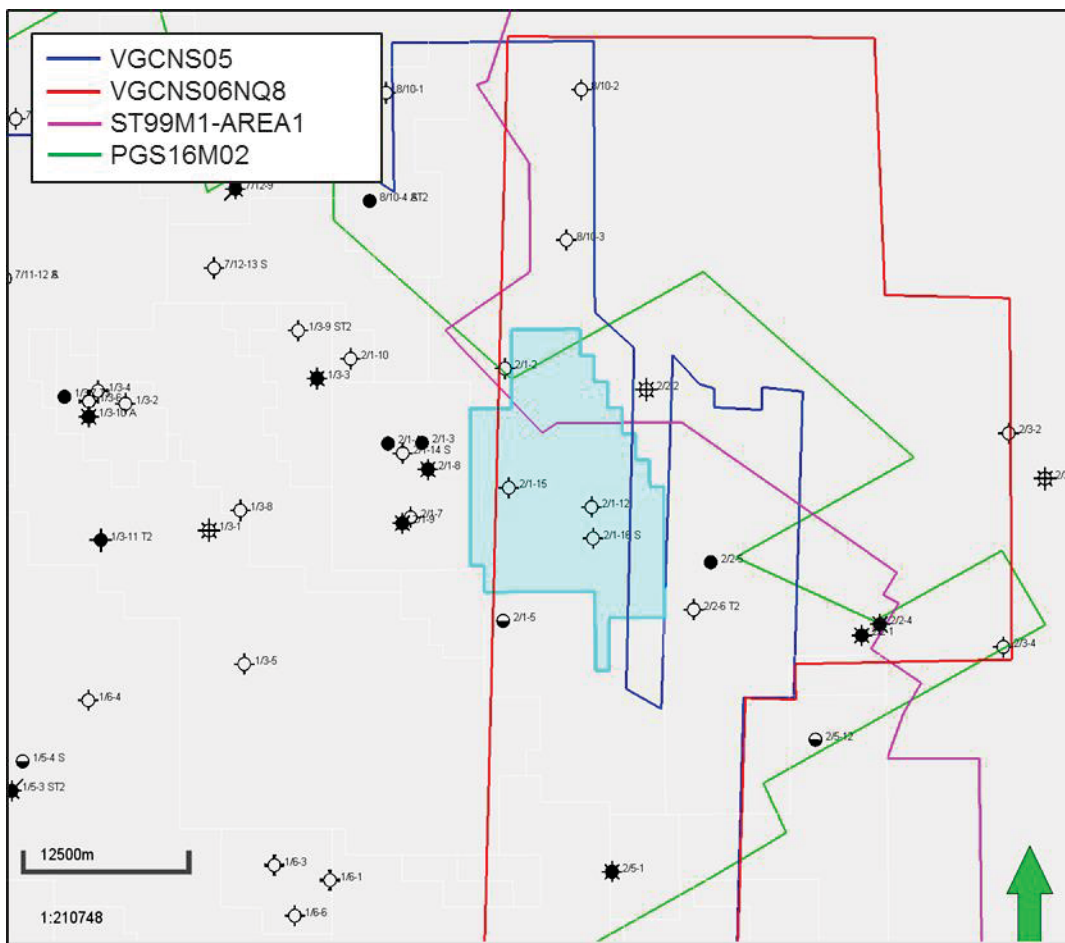
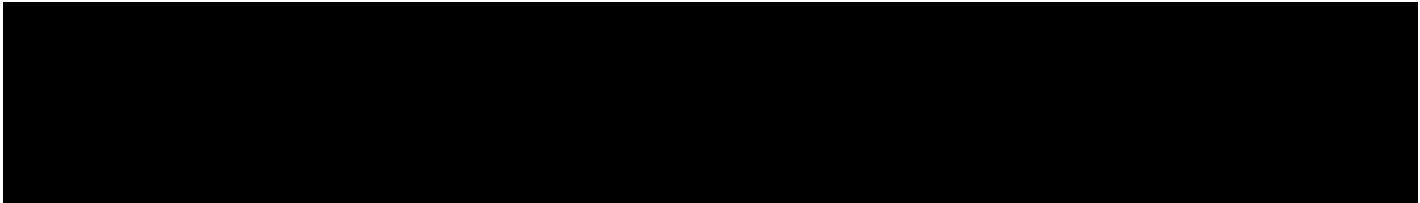


Figure 2.1 – Seismic database, outline of PL 772 is showed in cyan

Table 2.1: List of seismic surveys in the common database.

Survey/Dataset	Type	Data owner	Year	NPDID	Market available
VGCNS05	Angle/Full stack	License	2005	4334/4335	NO
VGCNS06NQ8	Angle/Full stack	License	2006	4405	NO
ST99M1-Area 1	Full Stack	License	1999	-	NO
PGS16M02 (PGS15008)	Angle/Full stack	PGS	2015	8184	YES

## 2.2 Well data

The well database used in the evaluation of PL 772 is given in Table 2.2.

**Table 2.2** - Well database for PL 772 (key wells only)

Well	Oldest penetration	Drilling operator	Content	Completion year	NPDID
8/10-3	Early Permian	ConocoPhillips Skandinavia AS	Dry	2010	6098
2/1-12	Middle Jurassic	BP Norway Limited U.A.	Dry	1999	3648
2/1-15	Triassic	Det norske oljeselskap ASA	Dry	2013	7219
2/1-16S	Late Jurassic	Talisman Energy Norge AS	Dry	2013	7180
2/4-20	Early Permian	ConocoPhillips Skandinavia AS	Dry	2008	5556

## 3 REVIEW OF GEOLOGICAL AND GEOPHYSICAL STUDIES

The following work have been performed since the license was awarded:

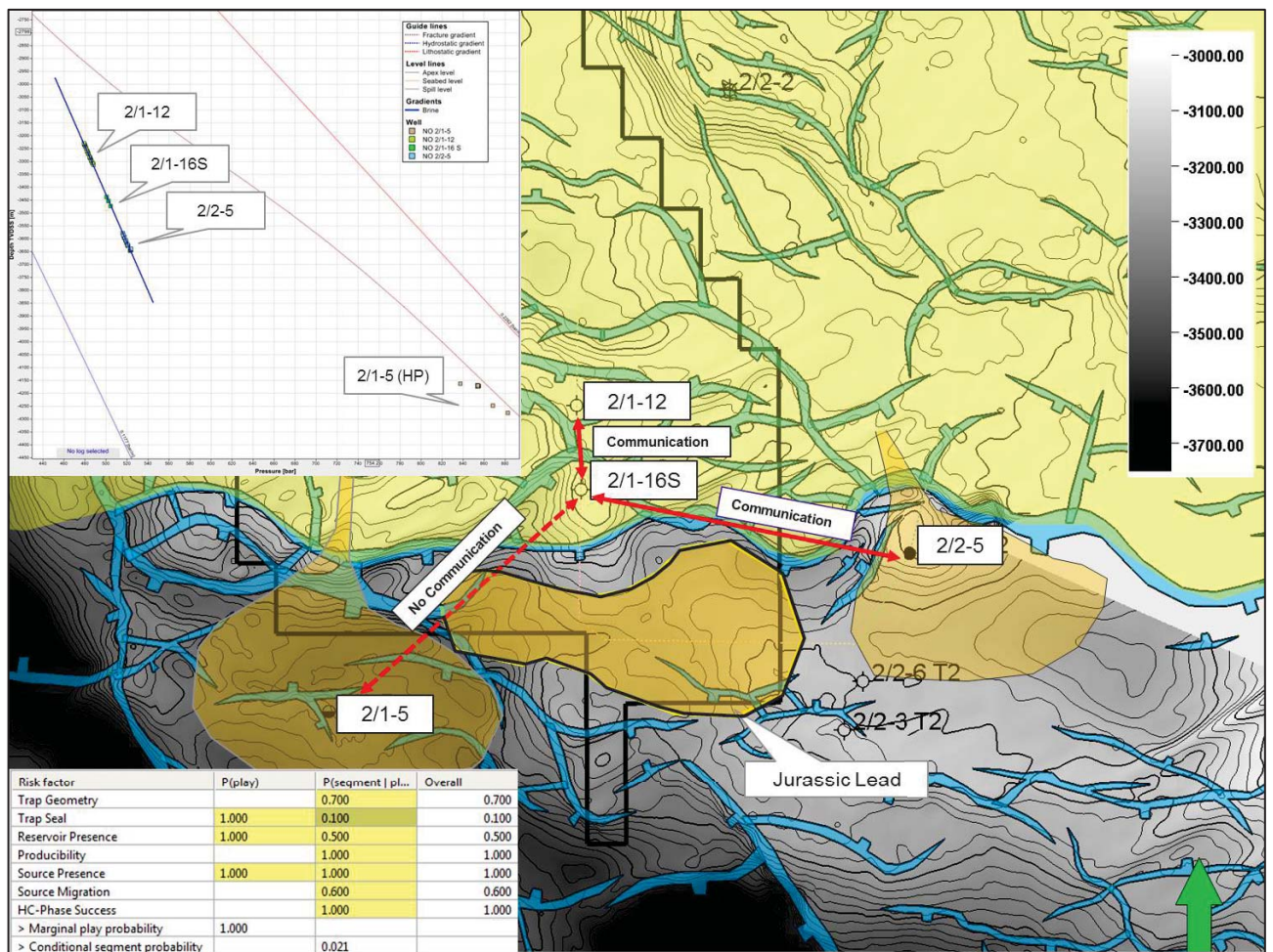
- Systematic screening of the license
- Evaluation of uplift from reprocessing vintage seismic prior to licensing PGS broadband survey
- Remapping of key horizons and faults, first on vintage and later on PGS data
- Updated/Extended well ties
- Updated Depth Conversion (2017)

The extended screening work included prospect levels ranging from Oligocene (Vade Formation) to Permian. The AVO studies performed internally did not highlight any fluid or sand anomalies on remapped surfaces.

The upper Jurassic play was the object of particular focus, given proximity with the King Lear discovery (PL146). Most of the Jurassic 4 way closures identified within PL772 have been drilled and found dry (2/1-2, 2/2-2, 2/1-15, 2/1-12, 2/1-16S). Any remaining prospectivity would therefore have to sit either in downfaulted or stratigraphic traps. The presence of sandy Farsund turbidites, entering the basin from various points along the Ula Gyda fault zone has been proven by well 2/1-5 (6m oil filled sand) and 2/2-5 (oil within 5m net sands at the base, sealed-off from the main waterbearing reservoir).

A stratigraphic lead was hence conceptualized within the untested area between wells 2/1-5 and 2/2-5. Fairly thin reservoirs as well as low hydrocarbon volumes were found in those two wells so that reservoir presence and charge are considered as high risk (0.5 and 0.6 respectively). In addition, communication between the Gyda shallow marine sandstones in well 2/1-12 (dry) and 2/1-16S (dry) and the Farsund turbidite in well 2/2-5 is clearly proven from pressure measurements (Figure 3.1). This lead would therefore have to be separated from these water bearing reservoirs, located up-dip, by depositional or structural barriers in order to hold hydrocarbons. A fault is visible between the lead area and well 2/1-16S but no clear separation can be established between the lead area and well 2/2-5.

As a result, the trap seal probability was set at 0.1, leading to a total 2.1% Pg.



**Figure 3.1** – Top, BCU map (time) and faults interpreted on PGS broadband survey and pressure vs depth plot highlighting communication between well 2/1-12, 2-16 S and 2/2-5. Bottom, risk overview.

#### 4 PROSPECT UPDATE

The Othello prospect is sitting at 4400m depth, within a rotated fault block, updip to the Romeo discovery (well 2/4-22, PL146). It is a high risk prospect ( $P_g=5.4\%$ ) where charge is the main risk (0.1). Only low volumes were found in Romeo so a charge of Othello via Romeo (fill and spill) is highly unlikely. Direct charge through source juxtaposition (Haugesund Fm.) was therefore considered but only a limited drainage area was observed on the vintage data. This drainage area was further examined using the PGS broadband data. Despite a clear quality improvement of the seismic resolution and consequent increase in the confidence of seismic interpretation of the key horizons, the drainage area appears to remain unchanged. The risked volumes remain therefore low and insufficient to further proceed with this prospect.

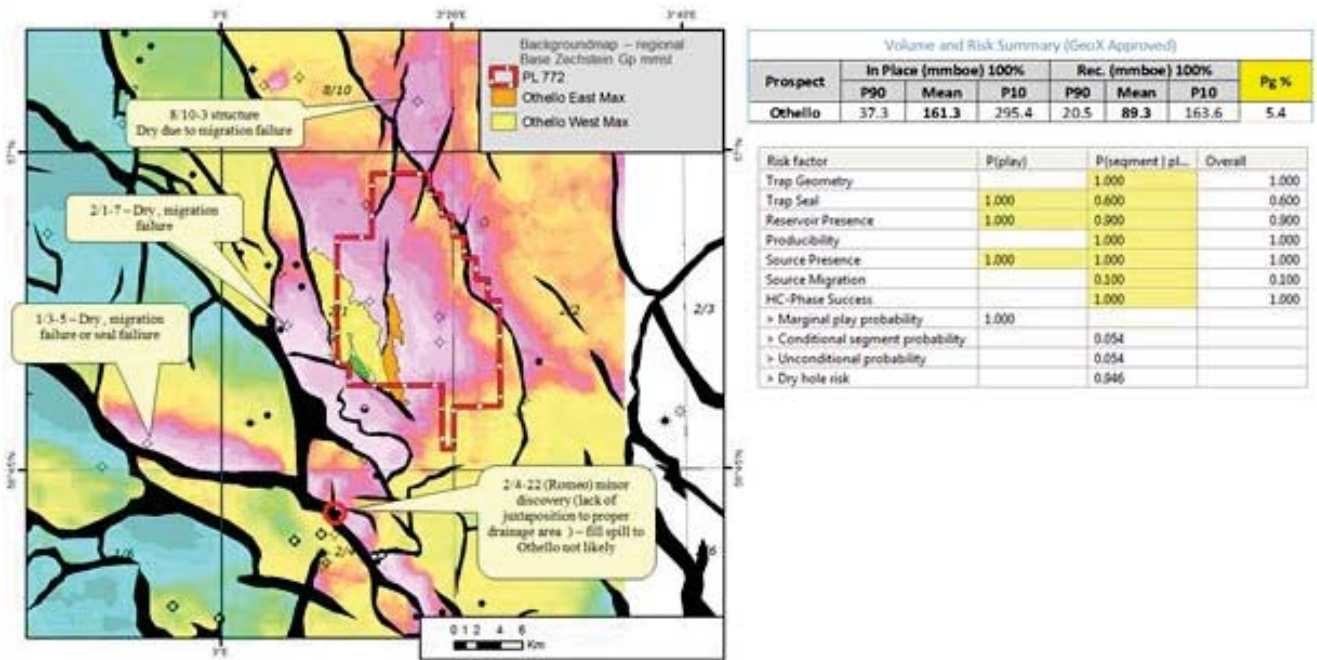


Figure 4.1 – Left, map showing position of Othello prospect with respect to key wells, highlighting high migration risk. Right, volume and risk summary.

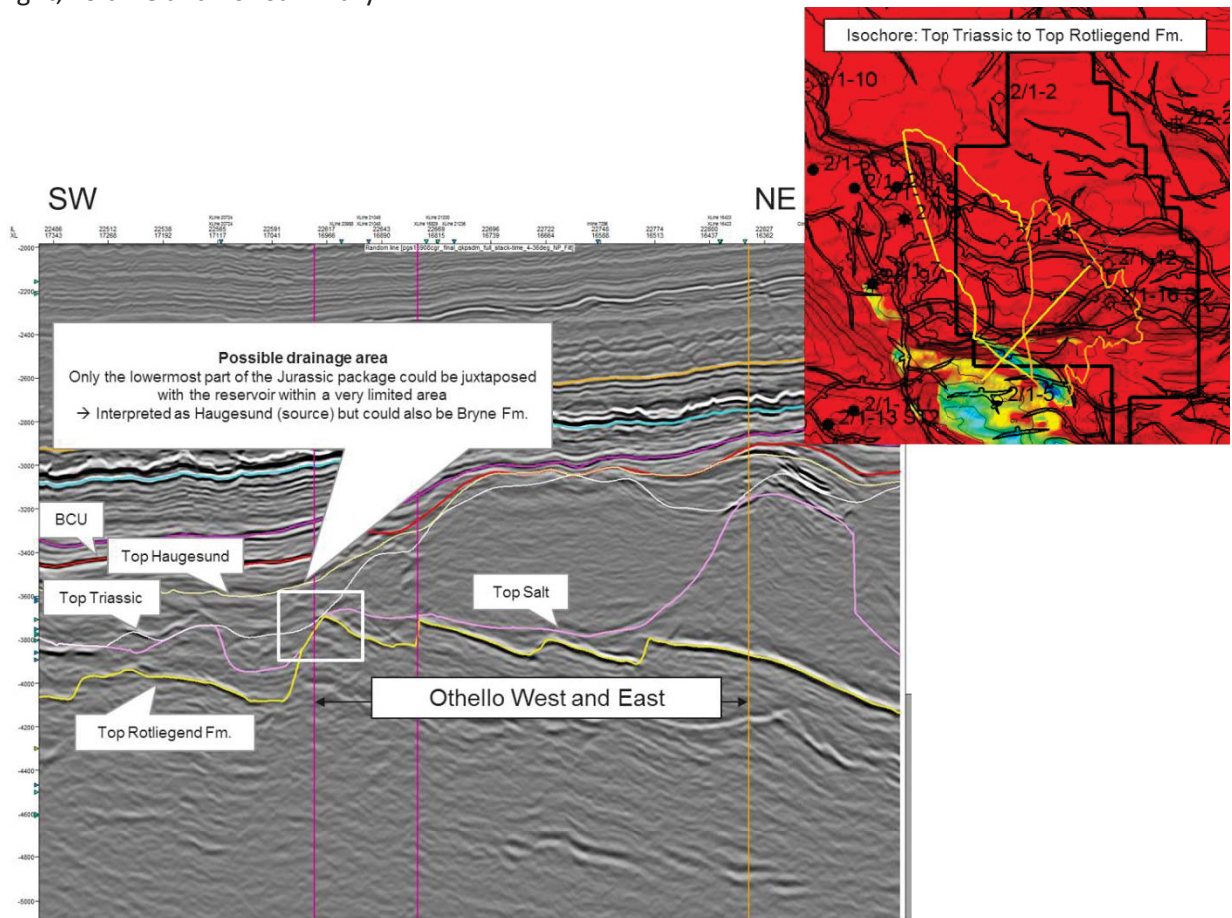


Figure 4.2 – Seismic cross section (PGS16M02, PSDM Full Stack) and isochore map highlighting the drainage limitations for the Othello prospect



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## **5 TECHNICAL EVALUATIONS**

No updated technical evaluation has been performed, volume and risk remains the same.

## **6 CONCLUSIONS**

The identified prospects and leads in PL772 show attractive volumes but a very low probability of success. Statoil doesn't see enough value in the license to continue with a drill decision in 2018, the license is consequently dropped.