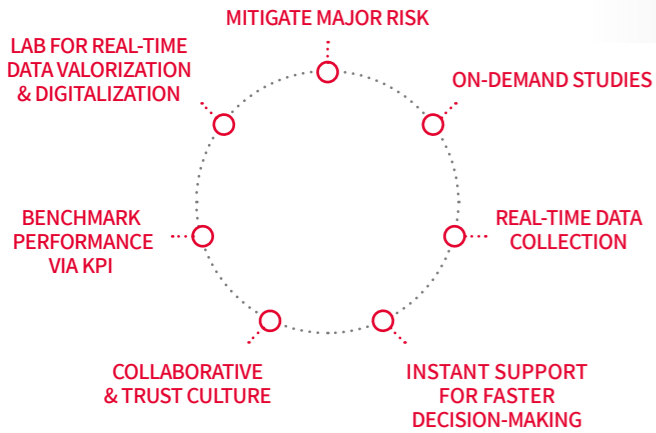


## Our main benefits



total.com



Total is a major energy operator that produces and markets fuel, natural gas and low-carbon electricity. Our 100,000 employees are committed to better energy that is safer, cleaner, more affordable and accessible to as many people as possible. Active in more than 130 countries, our ambition is to become the responsible energy major.



**TOTAL S.A**  
 Share capital: 6, 641, 697, 357, 50 euros  
 542 051 180 RCS Nanterre  
 Exploration & Production - Paris  
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 2, place Jean Millier - La Défense 6  
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Design: SVELT studio / Credits: Total - GONZALEZ Thierry - MUGUET Julien - MALFERE Damien - 2019

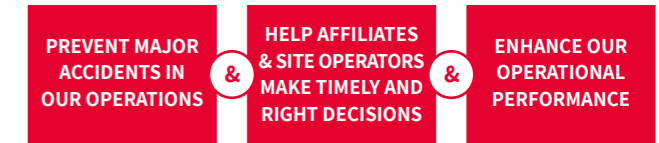
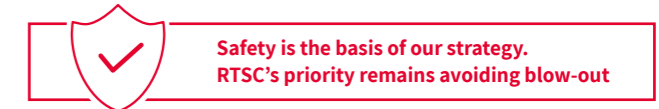


## Real Time Support Center RTSC

Data driven  
for drilling efficiency

The Real-Time Support Center (RTSC) project started in 2015 to prevent the most significant drilling hazards and maximize operational performance in our operated rigs, in even the most complex environments without compromising safety.

Located within the Jean-Féger Scientific and Technical Center (CSTJF) in Southwest France, with a satellite office in Aberdeen, this collaborative smart room collects data from all our worldwide drilling rigs and provides real-time monitoring/engineering support to subsidiaries on a 24/7 basis, incorporating innovative digital applications.



Real Time Collecting - Monitoring - Engineering - Reporting

Data analysis - Interpretation - Recommendations

Detect anomalies - Alerts if major risks

Performance Review & Benchmark

Transverse collaboration - Multi business line expertise in real-time 24/7



RTSC & Operational performance – Head of Service  
 Matthieu PECOITS - [matthieu.pecoits@total.com](mailto:matthieu.pecoits@total.com)

RTSC Engineers  
 Emmanuel WALIGWA - [emmanuel.waligwa@total.com](mailto:emmanuel.waligwa@total.com)  
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 Rodrigo NASCIMENTO - [rodrigo.nascimento@external.total.com](mailto:rodrigo.nascimento@external.total.com)

## Today

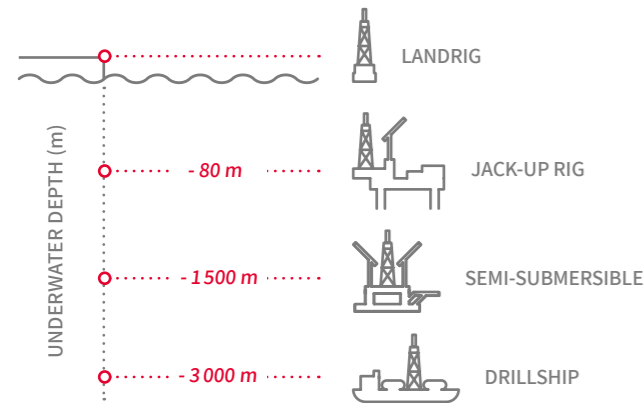
- DATA IS COLLECTED, AGGREGATED & STORED from all our worldwide operated drilling rigs into single database.
  - Rigs performance can be thus compared and adjusted instantly for maximum effectiveness.

- THE RTSC MONITORS REMOTELY THE MOST CRITICAL WELLS (cost & technical challenges) selected using the criteria set out by our company rules.
  - 9 rigs in real-time 24/7

- 2 TYPES OF DATA collected in real-time and diagnosed by our RTSC teams:



- THE TYPE OF DRILLING RIGS BEING MONITORED from the simplest to the most sophisticated...

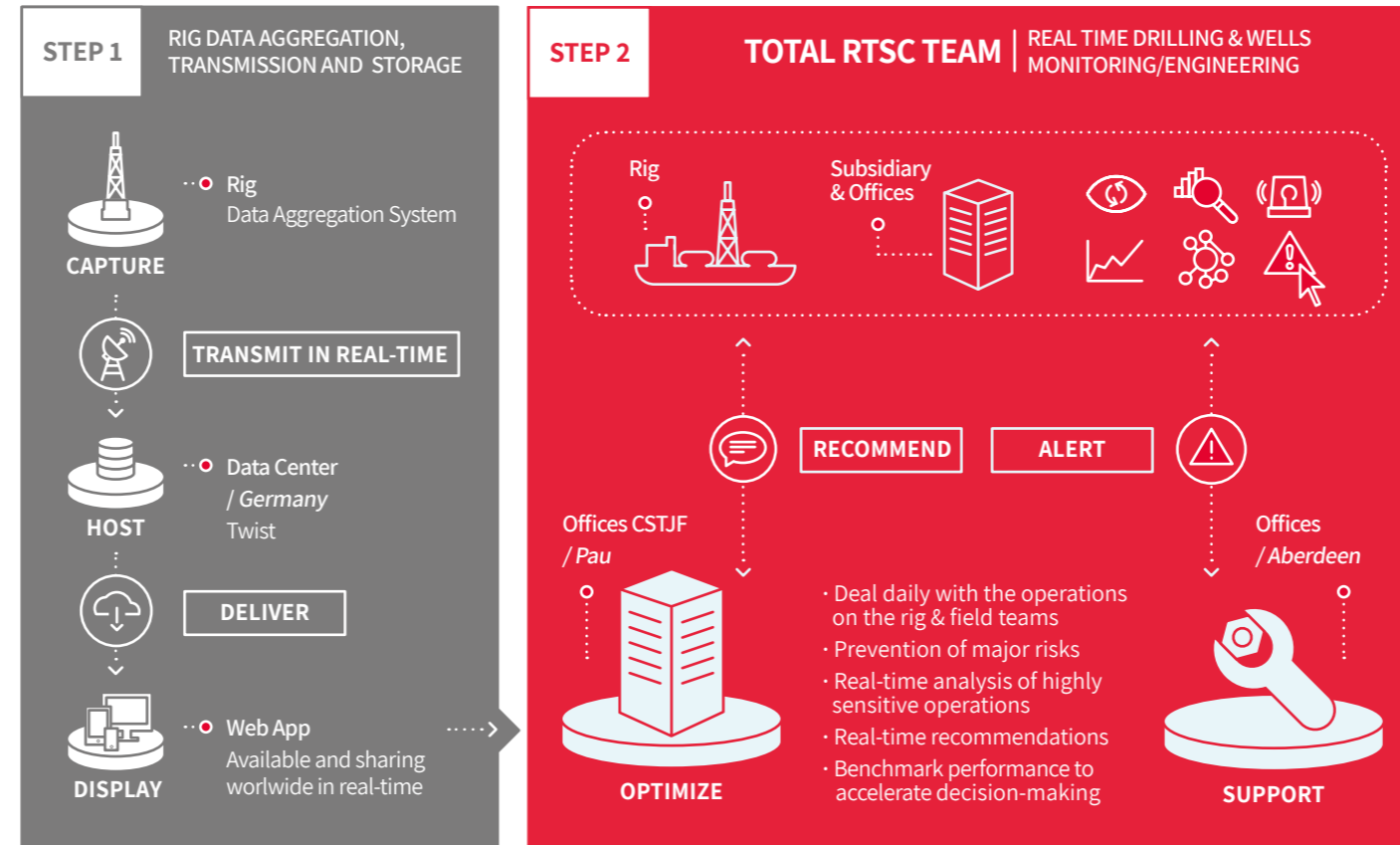


SINCE 2015:

- +200 WELLS OPERATIONS
- +35 VARIOUS DRILL RIGS
- ASSISTANCE TO +20 AFFILIATES
- 0 BLOW-OUT

## An integrated and efficient operating model

Most of the technology is readily available on the market but making it work is quite different thing and requires significant changes in workflow. We have successfully brought together experienced people, lean processes, real-time infrastructure and digital technologies to continually provide full range of customized services at your command.



\*In Pau : 4 drilling analysts & engineer (av. 20 years drilling experience) + Benefit from the excellence of the CSTJF resources - In Aberdeen : 12 drilling analysts shifts, alternating 24/7 (various profiles, av. +15years drilling experience within different service drilling companies such as directional drilling companies, mud logging, MWD, ...)

## NEXT-GENERATION RTSC: Digitalization & data valorization, a powerful catalyst for our operational safety and performance

Since its creation, the RTSC has supported more than 200 wells and has already delivered significant value.

We are motivated to go further and have two driving ambitions:

- Collect even more data, to identify and anticipate rig behaviors: rig dynamic positioning, BOP & well control equipment, Rig Power Management System, Remote Operating Vehicle video, wireline logging, etc.
- Foster our digital transformation and turn data into intelligence to provide predictive analytics.

### HOW?

- RTSC teams work closely with affiliates & DSO/Product Lines, to identify rig candidates for a pilot application before final implementation to all Total drilling rigs.
- RTSC teams work closely with the DrillX project team, whose primary objective is to deliver advanced digital solutions for real-time data valorization, such as predictive analytics.

PRIORITY ON 4 USE-CASES (two already in pilot phase):

