



# YPF – iUp intelligent Upstream

Máximo Frias – Lucas Llano

# YPF

# Outline

- YPF intro
- Business challenge
- iUp's Big Picture
  - iUp SCADA
  - iUp Web
- Conclusion

# YPF TODAY



**A 95-year-old company**

**Publicly traded corporation** since 1993 on the NY and BA Exchanges

**The largest O&G producer in Argentina**

542 Kboe/d (LTM)

41% Market Share

**World-class shale producer**

**The biggest outside the US**

98.4 K boe/d

894 productive wells

**The leading downstream player in Argentina**

- 3 refineries: 50% of Argentina's capacity. Over 320 kbb/d/day
- +1,500 gas stations. +36% Market Share
- +55% Market Share of diesel and gasoline
- 120 branches covering the agro sector
- #1 petrochemical manufacturer: output of over 2.2 mm tons/year

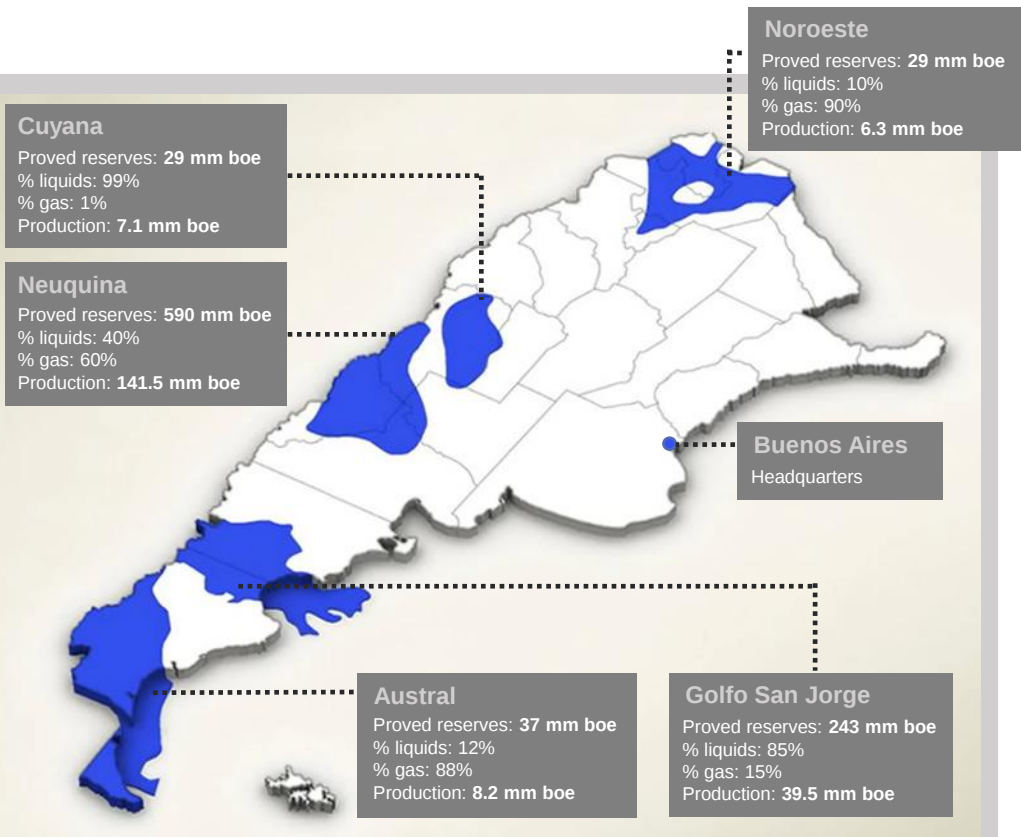
**YPF Luz fifth-largest power generator in Argentina:**

1.8 GW

**The Company that invests most in Argentina**

USD 3,400 (LTM)

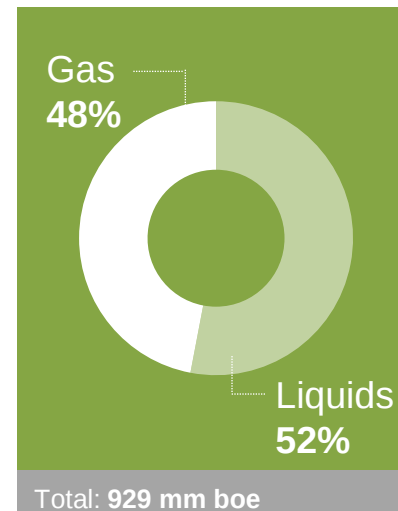
# UPSTREAM: SIGNIFICANT POTENTIAL WITH LEADING MARKET POSITION



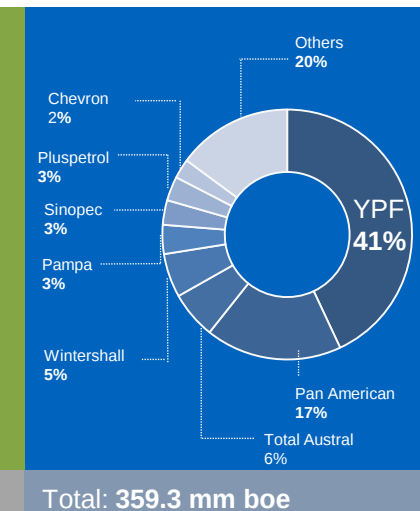
**YPF has 112 concessions** in the most productive Argentine basins (total reserves 1P: 929 mm boe) **and 23 exploration blocks** in the country

**2017**

## Proved reserves <sup>1</sup>



## Production share



# iUp's Big Picture

We have

17<sub>k</sub>



oil wells

scattered in

220



oil fields

supervised by

14



different production and  
artificial lift methods  
controllers

# Before: Well Grids

| Zona   | Tipo                                                                              | Nombre   | Estado        | Modo de Operación | Presión      | Producción |         |          | GPM  | Carrera | O Bomba | SelectVDF | Llenado de Bomba | PIP        | Causa Paro | Fecha Última Actualización |
|--------|-----------------------------------------------------------------------------------|----------|---------------|-------------------|--------------|------------|---------|----------|------|---------|---------|-----------|------------------|------------|------------|----------------------------|
|        |                                                                                   |          |               |                   |              | Ayer       | Hoy     | Proy.    |      |         |         |           |                  |            |            |                            |
| CENTRO |  | LCE-0001 |               |                   | 19,60 kg/cm2 |            |         |          | 3,95 |         | 1,50 ln |           |                  | 210,62 psi |            | 28/03/2019 02:14:33 p.m.   |
|        |  | LCH-0004 |               |                   |              |            |         |          |      |         |         |           |                  |            |            |                            |
|        |  | LLL-0140 |               |                   |              |            |         |          |      |         |         |           |                  |            |            |                            |
|        |  | LLL-0147 |               |                   |              |            |         |          |      |         |         |           |                  |            |            |                            |
| CENTRO |  | LLL-0324 | BOMBEO NORMAL | Normal            | 41,42 kg/cm2 | 2,15 m3    | 1,03 m3 | 3,18 m3  | 3,32 |         | 1,25 ln | AUTO      |                  | 172,58 psi |            | 28/03/2019 02:14:38 p.m.   |
| CENTRO |  | LLL-0328 |               |                   |              |            |         |          |      |         | 1,50 ln |           |                  |            |            |                            |
| CENTRO |  | LLL-0353 | BOMBEO NORMAL | Normal            | 29,88 kg/cm2 | 16,14 m3   | 5,47 m3 | 16,14 m3 | 4,97 |         | 1,50 ln | AUTO      |                  | 703,10 psi |            | 28/03/2019 02:14:34 p.m.   |
| CENTRO |  | LLL-0356 |               |                   |              |            |         |          |      |         | 1,50 ln |           |                  |            |            |                            |
| CENTRO |  | LLL-0358 | BOMBEO NORMAL | Normal            | 29,88 kg/cm2 | 16,14 m3   | 5,47 m3 | 16,14 m3 | 4,97 |         | 1,50 ln | AUTO      |                  | 703,10 psi | Ultimo     | 28/03/2019 02:14:34 p.m.   |

LCE-0001

Graficador 



Estado

Transcurrido: 01:11:264  
Comando Host:

Operación

Modo de Operación:  
Modo de Control:  
Modo Downtime : MANUAL  
Periodo Downtime :  
Min. Carreras para Controlar :  
Llave VDF :

Valores Instantaneos

Torque: 0,00  
Rpm: 562  
PIP Actual: 210,62psi  
Gpm: 3,95  
Llenado de bomba: %  
Set: %

Producción

Ayer Hoy Proy.  
Petroleo:  
Agua:  
Total:  
Corte de Agua seteado: 15,00 %

Datos Adicionales

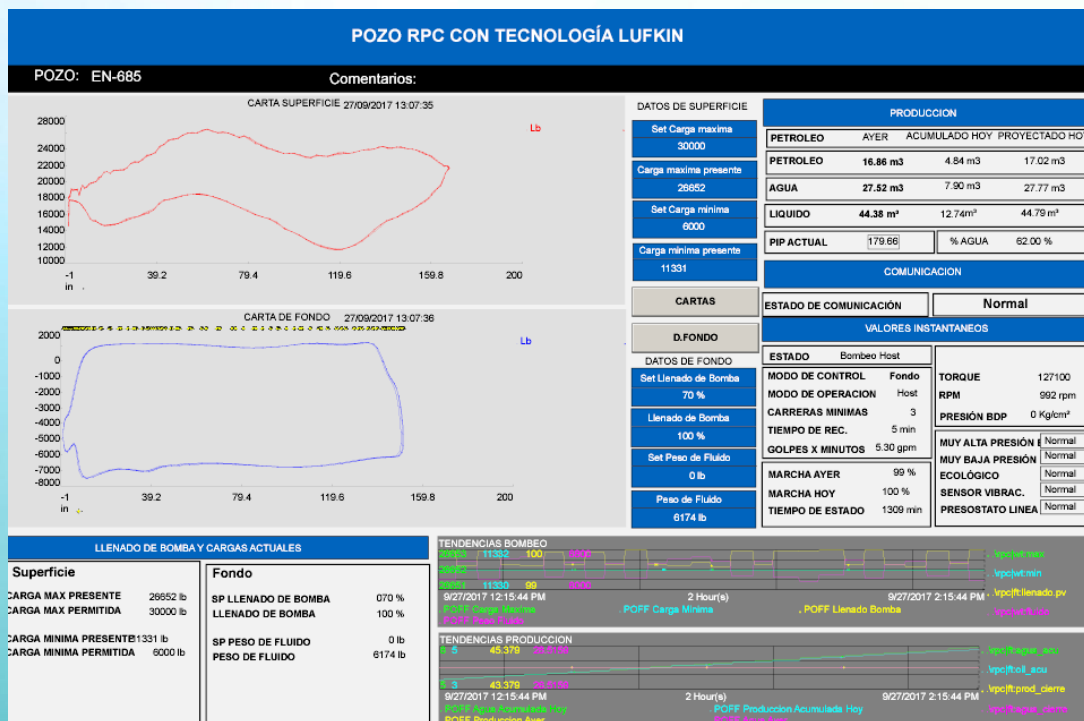
Ultimas Alarmas  
Ultimos Paros


**OSIsoft.**  
**PIWorld** SAN FRANCISCO 2019

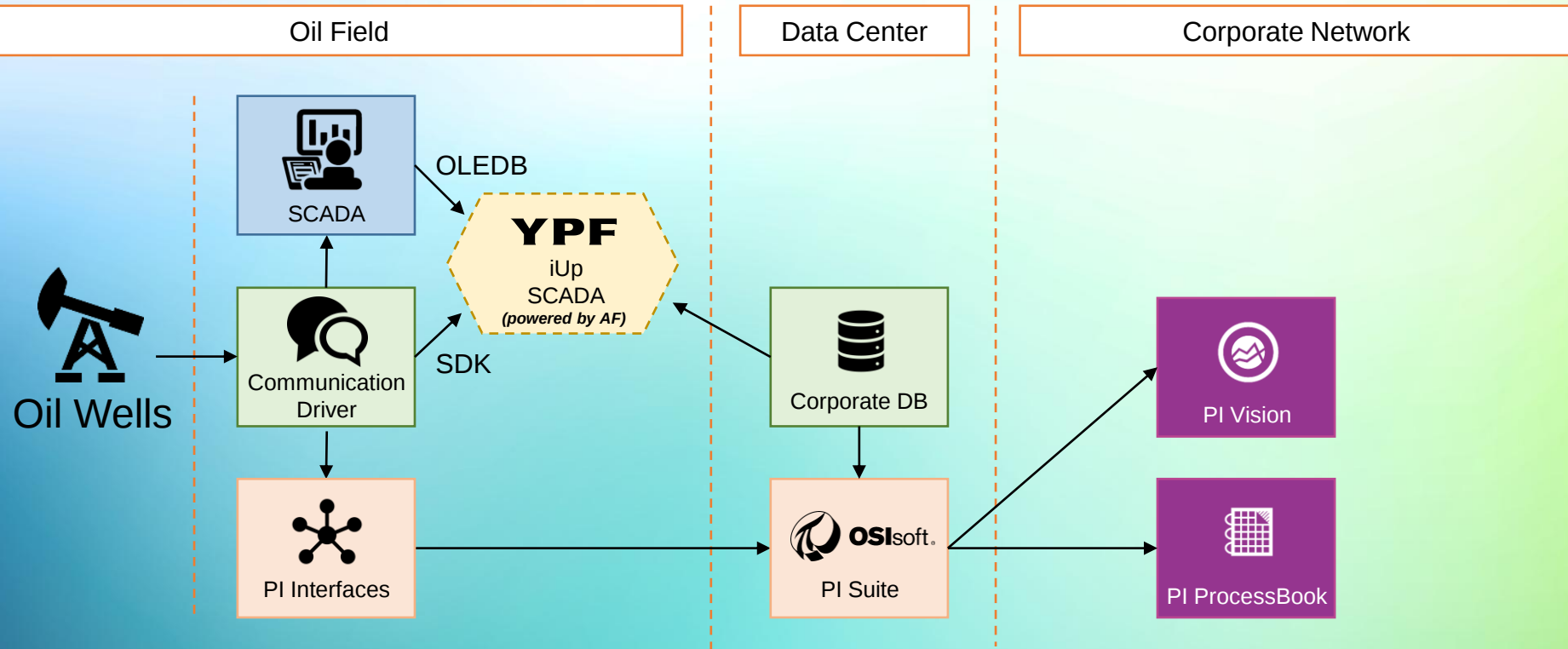
#PIWorld ©2019 OSIsoft, LLC

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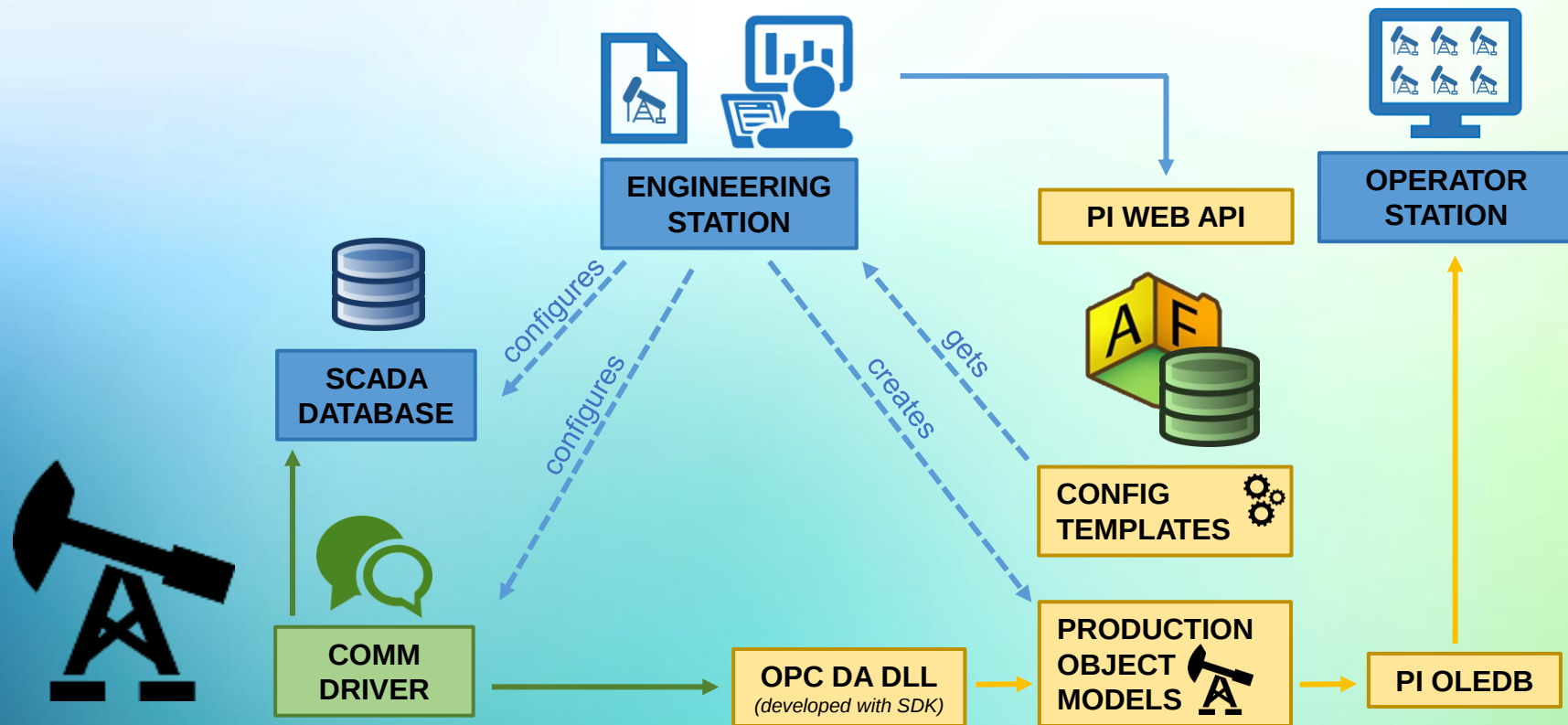
# Before: Dyna Cards



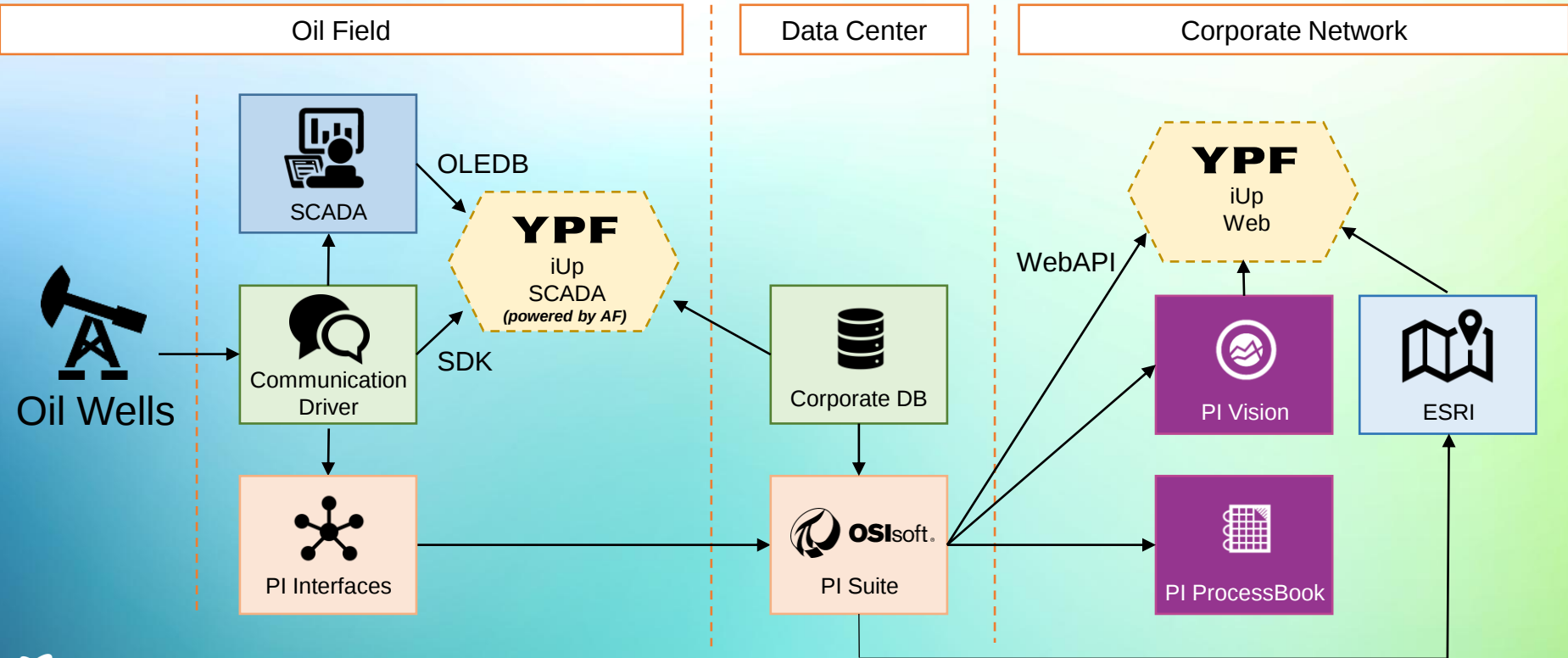
# iUp's Big Picture



# iUp SCADA



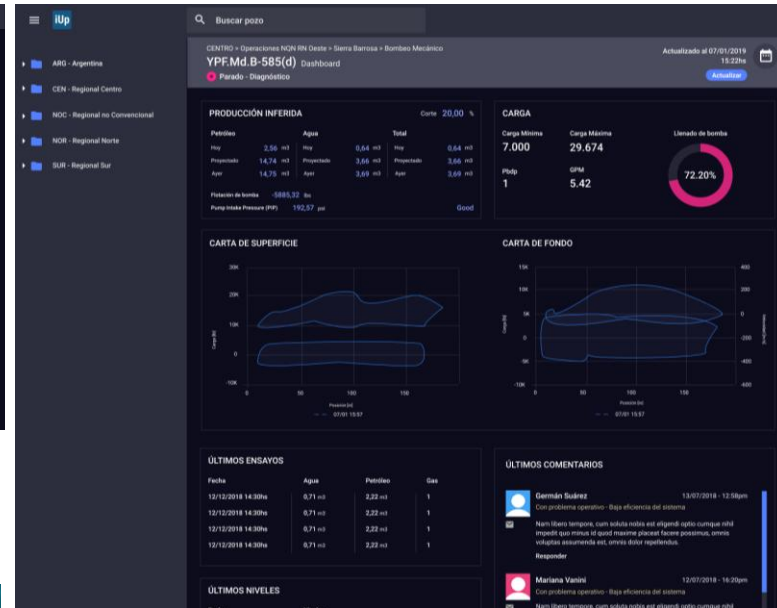
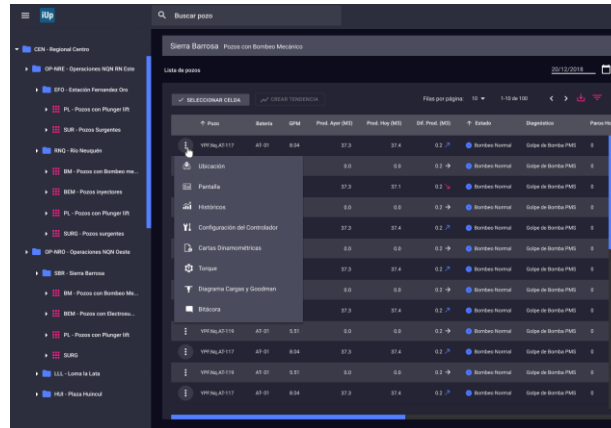
# iUp's Big Picture



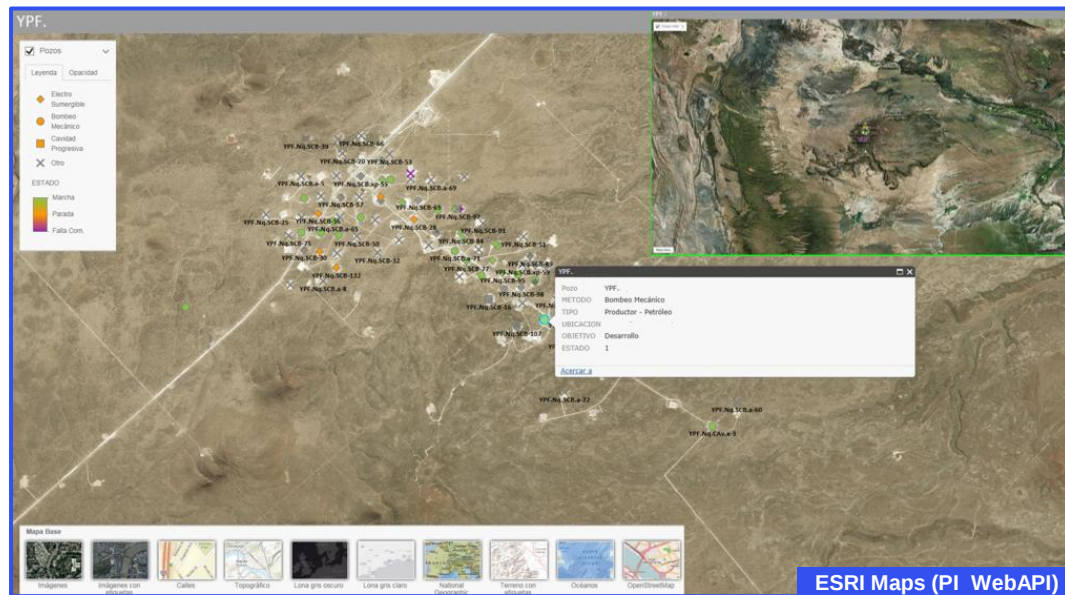
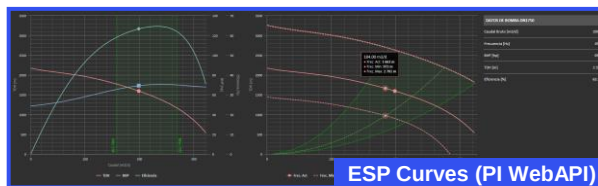
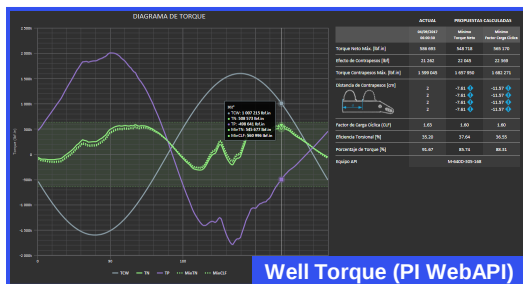
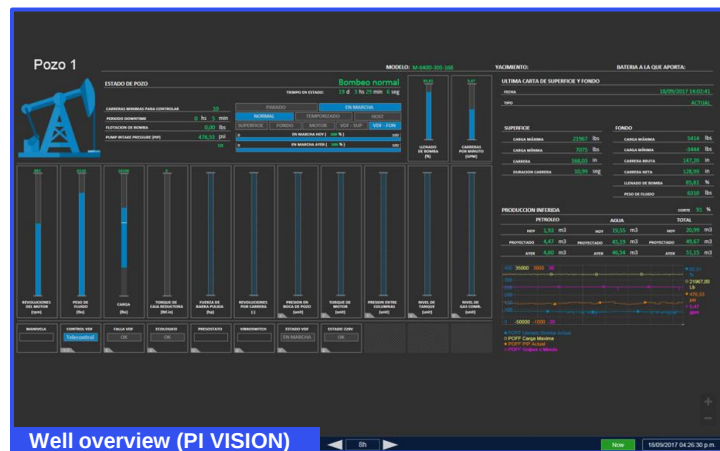
# iUp Web

## Widgets

- Torque
- Goodman
- Pump
- Curves
- Dyna Cards

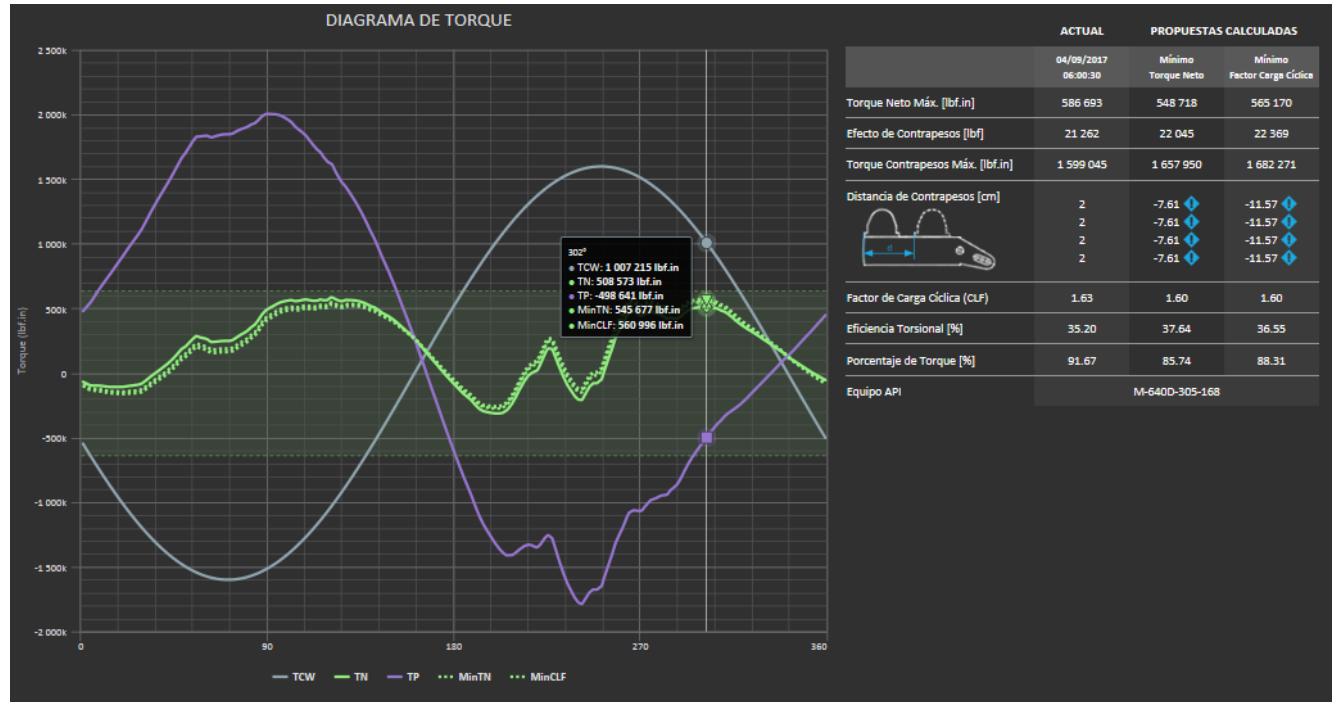


# iUp Web



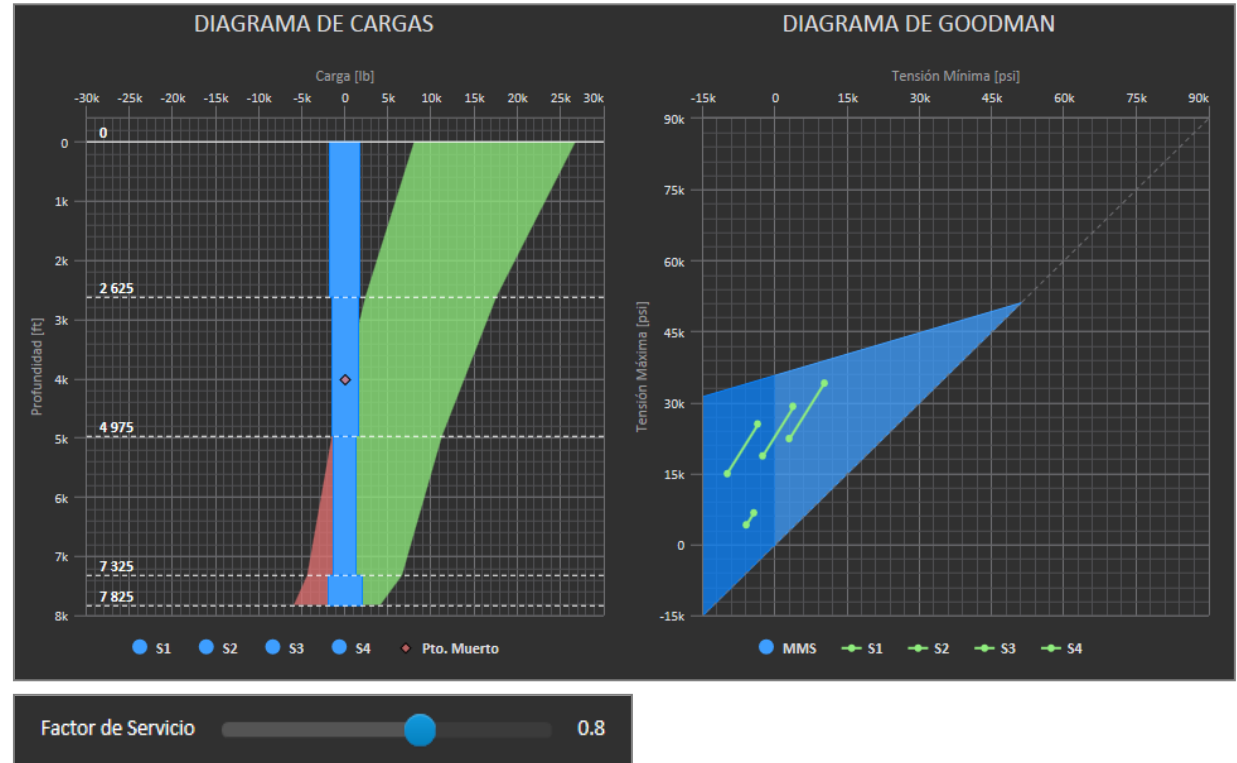
# iUp Web - Beam Pump Torque

- Minimum Net Torque
- Minimum CLF



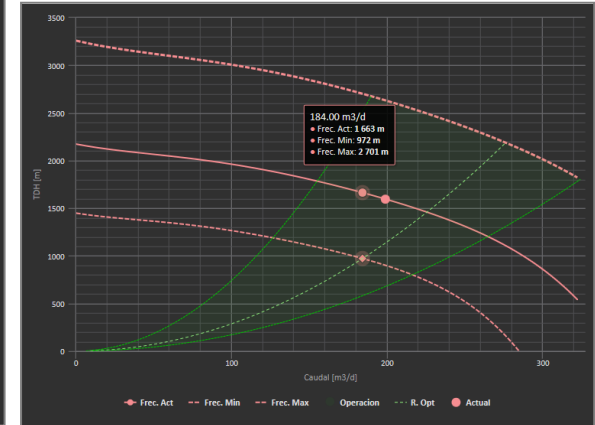
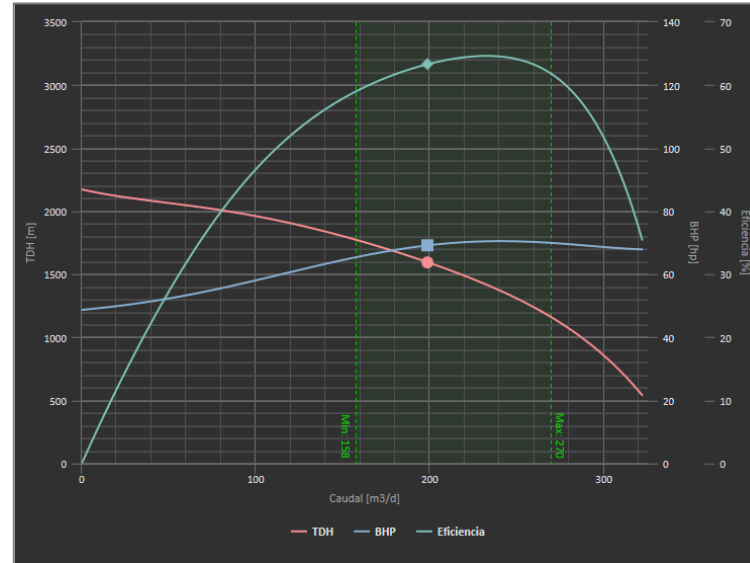
# iUp Web – Beam Pump Goodman

- Metallurgical stress
- Service Factor

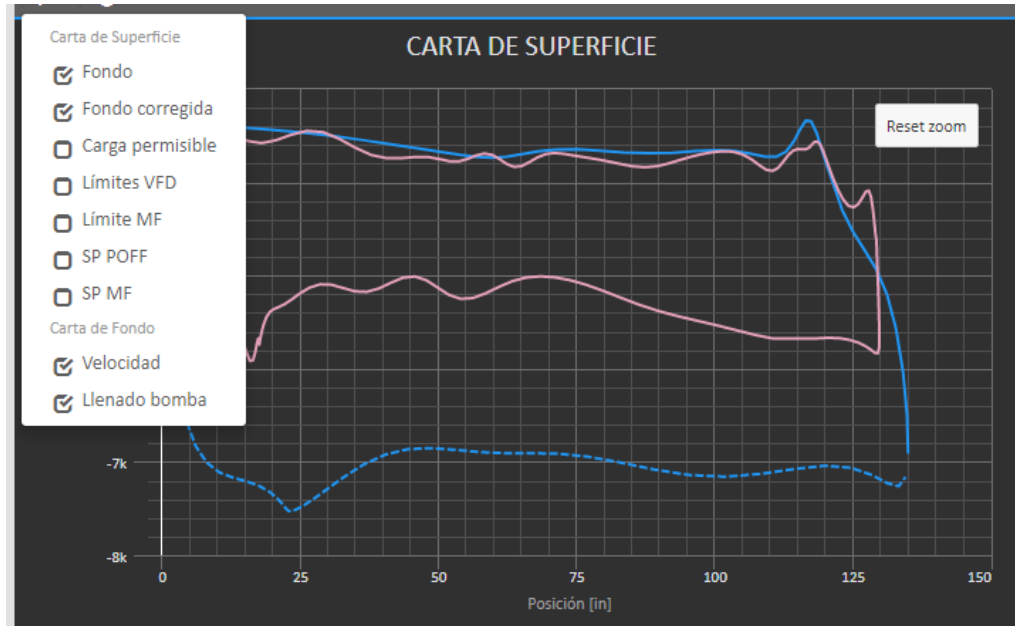


# iUp Web – ESP pump curves

- Real-time data
- Operating window



# iUp Web: Dyna card diagnostic



20/03 11:07

| CARTA DE SUPERFICIE    | Limite | Valor           |
|------------------------|--------|-----------------|
| Carga Máxima [lb]      | 30 500 | 28 837          |
| Carga Mínima [lb]      | 5 300  | 9 584           |
| Carrera [in]           |        | 168.03          |
| Duración Carrera [seg] |        | 8.68(3.73+4.95) |
| GPM                    |        | 6.91            |

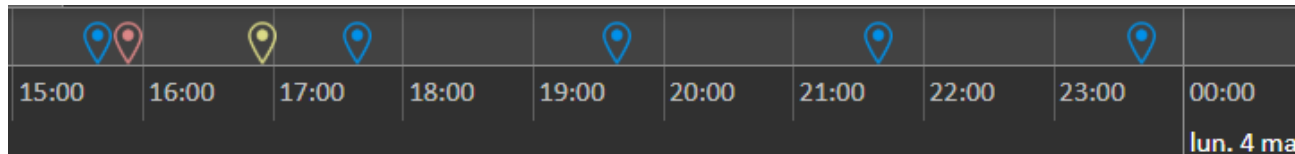
  

| CARTA DE FONDO       | Limite | Valor  |
|----------------------|--------|--------|
| Llenado de Bomba [%] | 90     | 98.61  |
| Peso de Fluido [lb]  | 3 500  | 7 313  |
| Carga Máxima [lb]    |        | 3 460  |
| Carga Mínima [lb]    |        | -5 816 |
| Carrera Bruta [in]   |        | 145.50 |
| Carrera Neta [in]    |        | 142.76 |

Equipo API M-912D-305-168 (168-1)

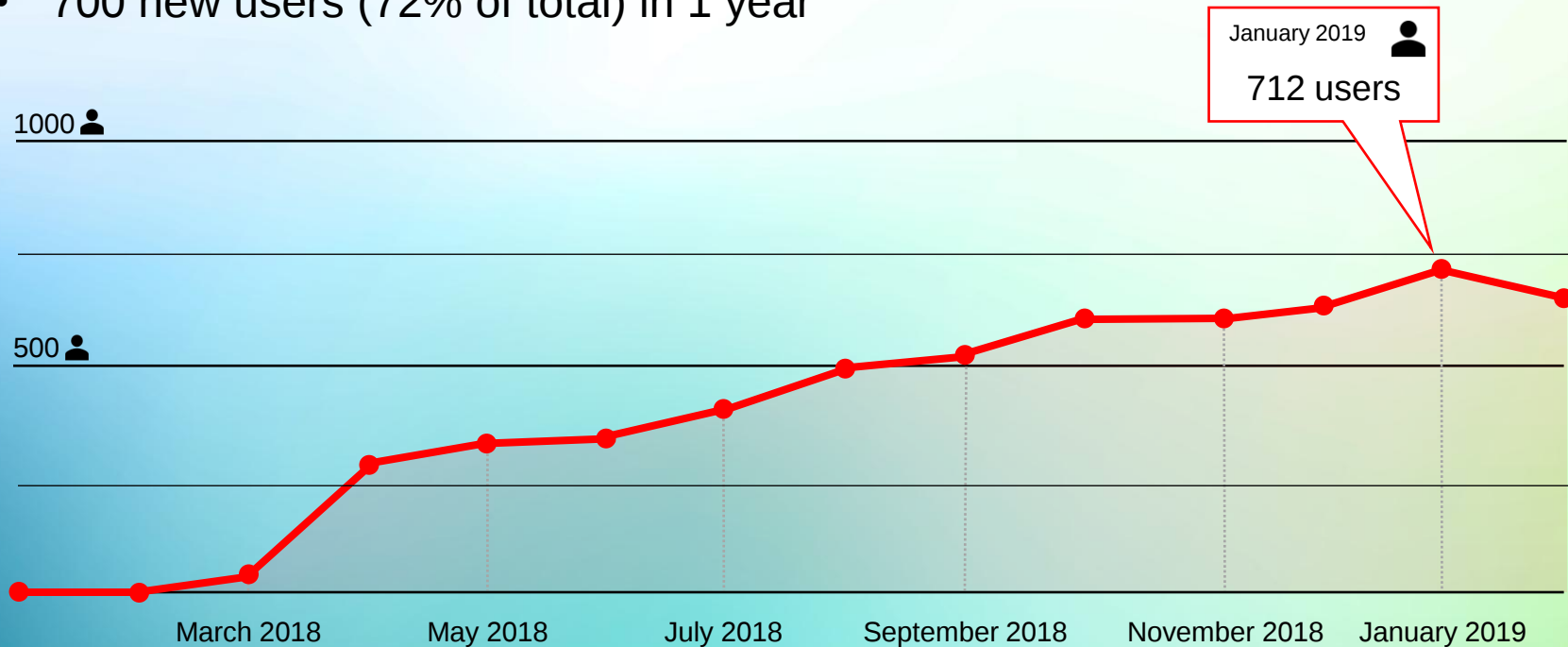
**DIAGNOSTICO**

|                       |
|-----------------------|
| Bomba llena           |
| Golpe de Bomba PMS    |
| Bomba llena           |
| Perdida VF            |
| Bomba llena           |
| Golpe de fluido medio |
| Bloqueo por gas       |
| Golpe de fluido leve  |
| Perdida VF            |
| Carta Invalida        |
| Golpe de fluido leve  |
| Bomba llena           |
| Bomba llena           |
| Golpe de Bomba PMI    |
| Bomba llena           |



# Conclusion

- 700 new users (72% of total) in 1 year



# Business Challenge: standardize data countrywide 17K wells in 220 oil fields



## CHALLENGE

Collect, transform and display data across the country in a uniform way.

- Field data collection
- Asset modelling
- Presentation layer

## SOLUTION

Provide SCADA with **template capability** and give users a website with **precise information**

- PI AF
- PI Web API
- SQL and OLEDB

## RESULTS

Everybody gets the same information, the same way and performs the same analysis.

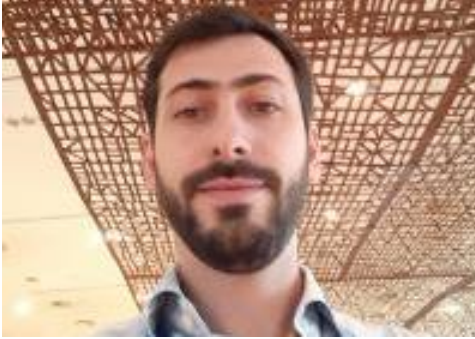
- 700+ users
- Engineers more productive
- Increase uptime

# Next steps

- Mobile
- Notifications
- KPIs



# Presenters



- Lucas Llano
- Data Management Specialist
- YPF
- [lucas.llano@ypf.com](mailto:lucas.llano@ypf.com)



- Máximo Frías
- SCADA Specialist
- YPF
- [maximo.a.frias@ypf.com](mailto:maximo.a.frias@ypf.com)

# Questions?

Please wait for  
the **microphone**

State your  
**name & company**



# Please remember

TO DOWNLOAD  
APP, SEARCH  
OSISOFT



