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PARQ



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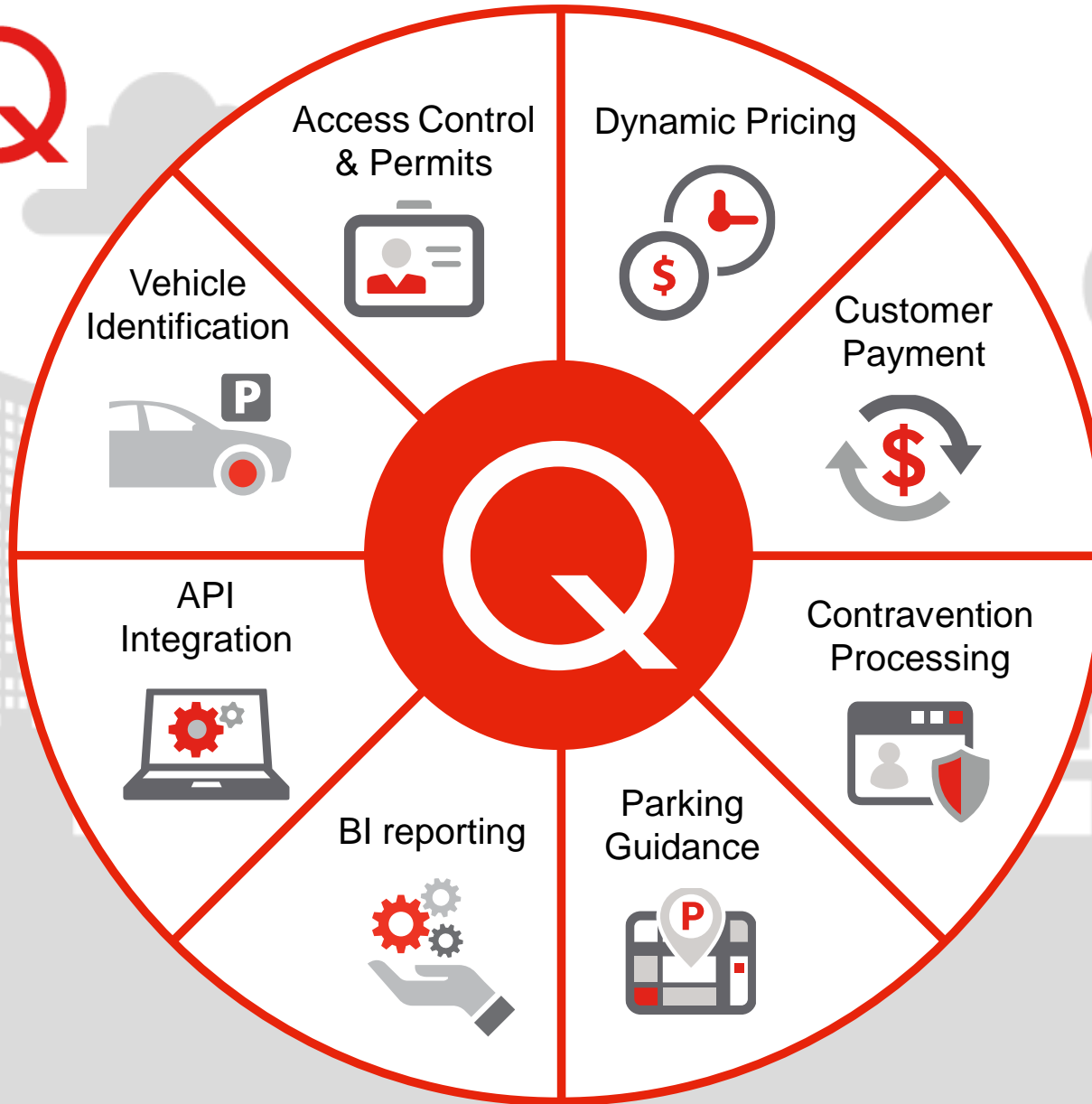
# What is Q-Free



- Q-Free ParQ is a modern, flexible, and modularized parking management system
- Our competitive edge is based on:
  - **Unrivalled performance:** “best in class data quality and accuracy”
  - **High flexibility:** “modular end-to-end offering built on open standards”
  - **Innovation:** “ticketless, barrierless, cashless, dynamic parking”
  - **Trust:** “high delivery precision, global reach/local presence, and ethical business practices”

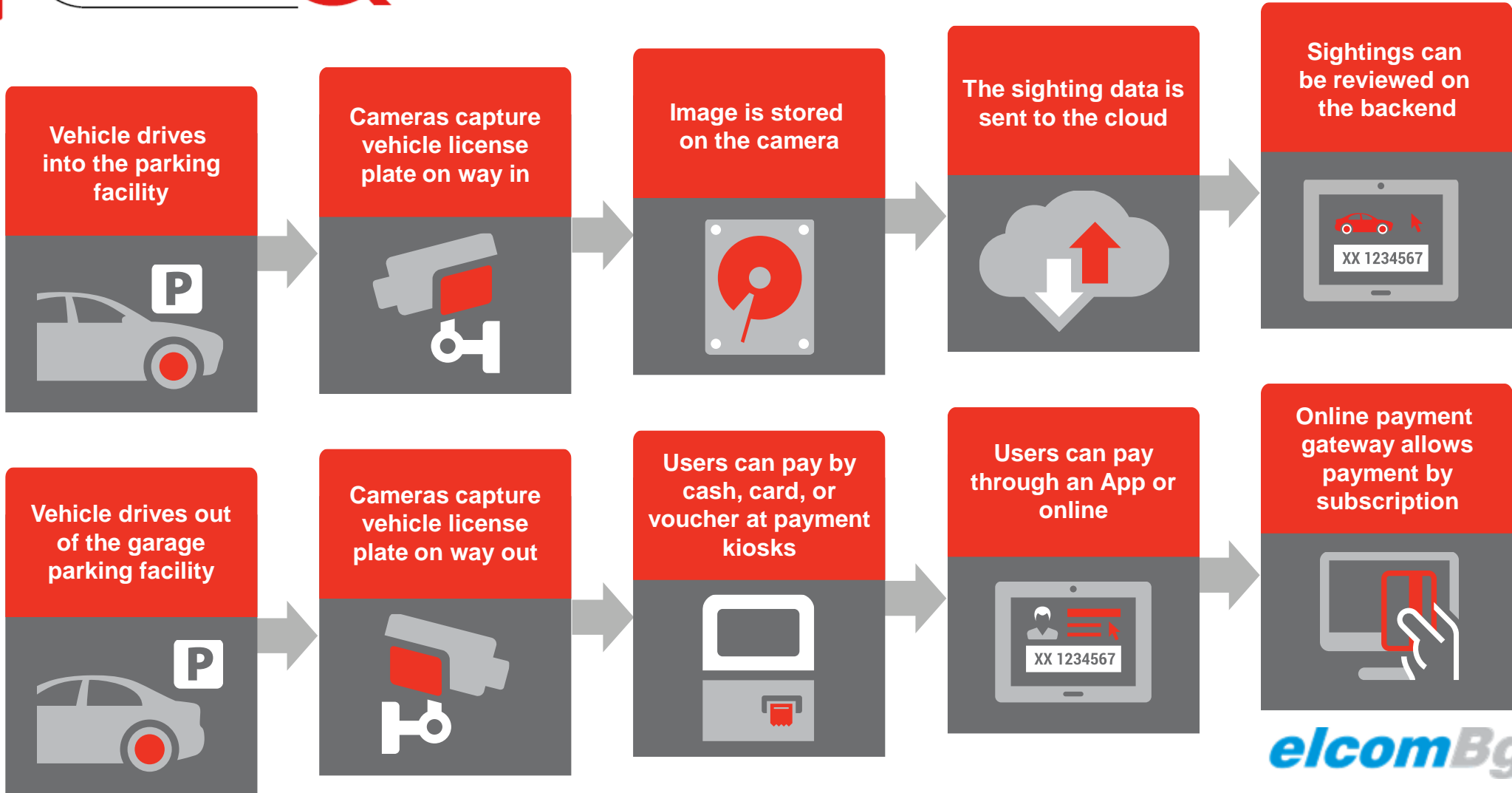


# PARQ





# At a Glance



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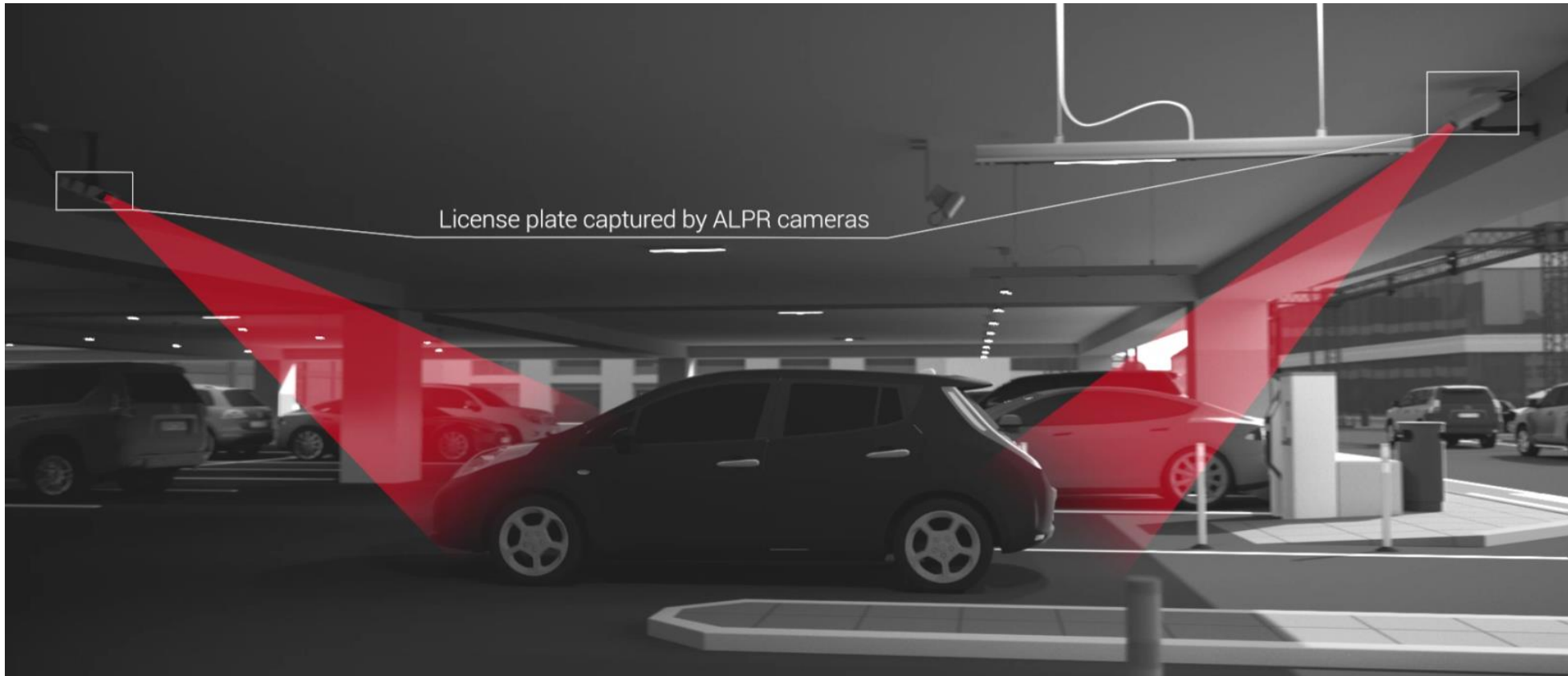


Vehicle  
Identification &  
Detection





# Vehicle Identification – Camera / ALPR



License plate captured by ALPR cameras

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# Vehicle Identification – DSRC / RFID



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# Vehicle Detection – USDS sensors



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# Vehicle Detection – Single space sensors



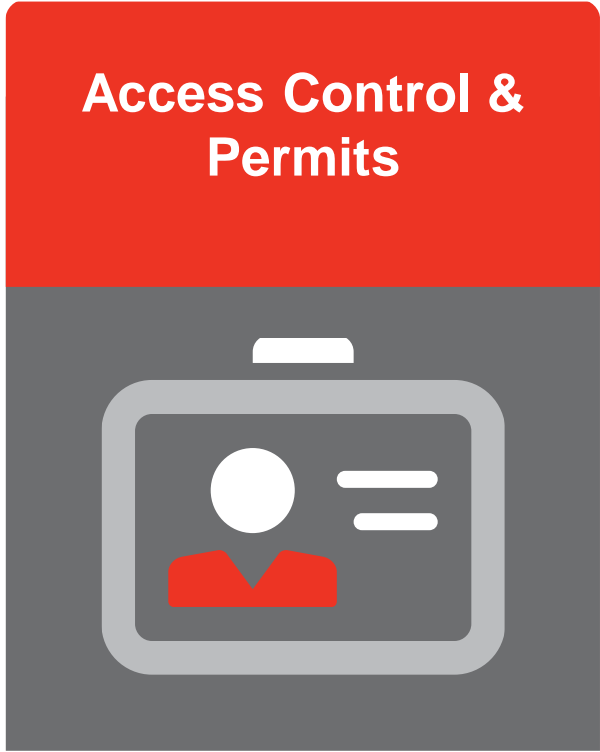
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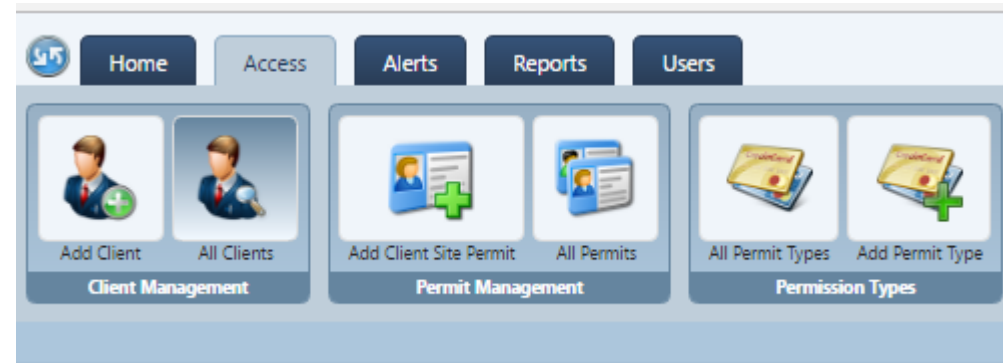
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# PARQ Access Control, clients and permits



- Q-Free ParQ contains all necessary functions for access control
  - Client management
  - Permit Types
    - White lists
    - Black lists
    - Flexible period permits



- Permits enable flexible mixed use of the parking facility including
  - Residential
  - Corporate
  - Regular users

# PARQ Information displays



- Flexible Message display capability with graphic editor in Q-Free ParQ

Seven Segment LED



Full Color LED Matrix Display



Outdoor TFT LCD Monitor





PARQ



## Dynamic Pricing

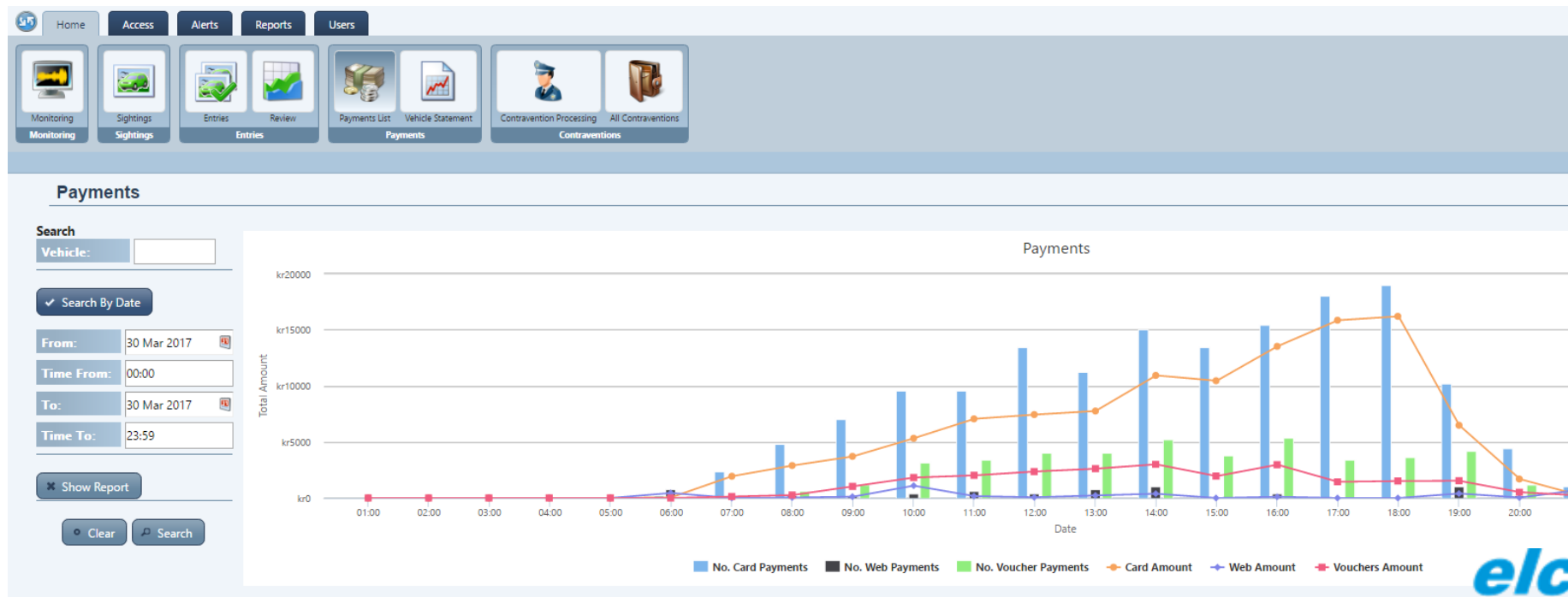




# Flexible tariff engine, the basis for dynamic pricing



- Q-Free ParQ contains a flexible tariff engine
- Full set of payment reports



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**Dynamic pricing with value add ParQ sensors**



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# Vehicle Detection – Single space sensors



Real-time occupancy data can be used to provide dynamic pricing

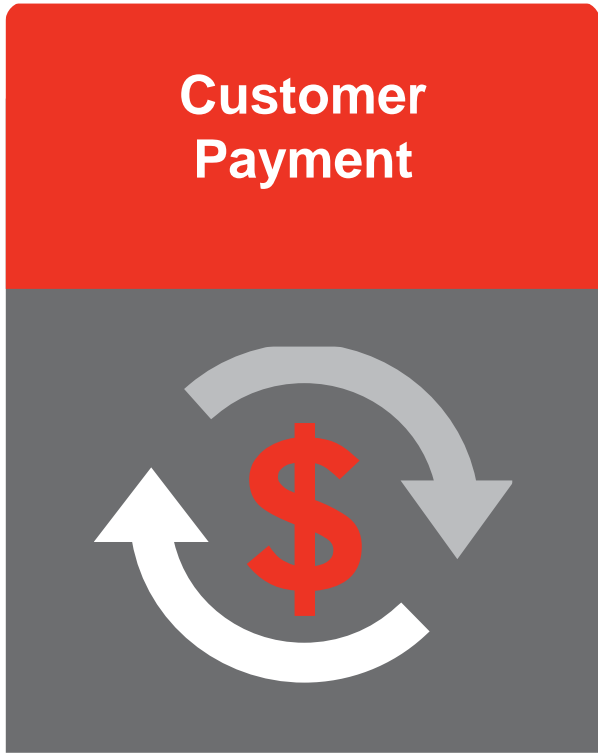
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# Customer payment - kiosks



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# PARQ Payment options in kiosks



# PARQ Payment options Online





PARQ



## Contravention processing



# PARQ Customer payment - kiosks



- Full support for contravention processing
- API for external payment claims providers

The screenshot shows the 'Contravention Processing' section of the PARQ web application. It features a navigation bar with 'Home', 'Access', 'Alerts', 'Reports', and 'Users'. Below the navigation bar, there is a search panel on the left with fields for 'Type' (set to 'All'), 'Vehicle', and date ranges for 'From' and 'To' (both set to '30 Mar 2017'). A 'Search By Date' checkbox is checked. At the bottom of the search panel are 'Clear' and 'Search' buttons. The main content area displays a summary of contraventions: 'Unprocessed: 6616', 'Tickets: 0', 'Posted: 29011', and 'Discarded: 72332'. Below this is a table with 10 entries, showing columns for 'S', 'ID', 'Plate', 'Date', 'Date Created', 'Age', 'Duration', and 'Type'. The table lists 10 contraventions, all with a 'Type' of 'No Payment'. At the bottom of the table area, there are buttons for 'Select All', 'Deselect All', 'Process Selected', and 'Discard Selected'. A status bar at the very bottom indicates 'Showing 1 to 10 of 6,615 entries'.

S	ID	Plate	Date	Date Created	Age	Duration	Type
<input type="checkbox"/>	76675	ADW877	17 Mar 2017	20 Mar 2017 16:12:21	13	02h 31m 01s	No Payment
<input type="checkbox"/>	76681	TWT618	17 Mar 2017	20 Mar 2017 16:24:06	13	07h 14m 19s	No Payment
<input type="checkbox"/>	76693	SOW573	17 Mar 2017	20 Mar 2017 17:15:08	13	07h 37m 58s	No Payment
<input type="checkbox"/>	76695	WKG208	17 Mar 2017	20 Mar 2017 17:26:24	13	02h 27m 56s	No Payment
<input type="checkbox"/>	76696	JJX511	17 Mar 2017	20 Mar 2017 17:32:09	13	02h 17m 38s	No Payment
<input type="checkbox"/>	76705	USN762	17 Mar 2017	20 Mar 2017 18:39:45	13	02h 50m 21s	No Payment
<input type="checkbox"/>	76707	PPP100	17 Mar 2017	20 Mar 2017 19:08:20	13	02h 17m 07s	No Payment
<input type="checkbox"/>	76710	D2HOT4U	17 Mar 2017	20 Mar 2017 22:16:57	13	04h 12m 12s	No Payment
<input type="checkbox"/>	76711	MNL354	17 Mar 2017	20 Mar 2017 22:54:08	13	03h 22m 46s	No Payment
<input type="checkbox"/>	76712	DNW511	18 Mar 2017	21 Mar 2017 00:29:48	12	06h 23m 49s	No Payment



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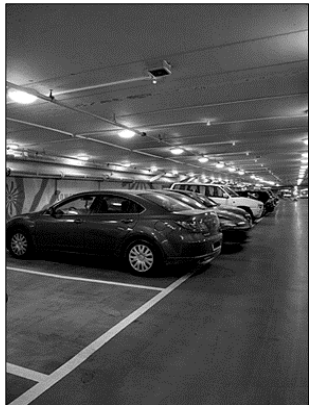


# PARQ Parking guidance solutions



## FACILITY COUNTING

Help you and your customers know how many spaces are available in your garage real time.



## SINGLE SPACE MONITORING

Help your customer get in fast and optimize space utilization with a single space monitoring system.



## LEVEL COUNTING

Minimize customer frustration with a level counting solution from Q-Free.

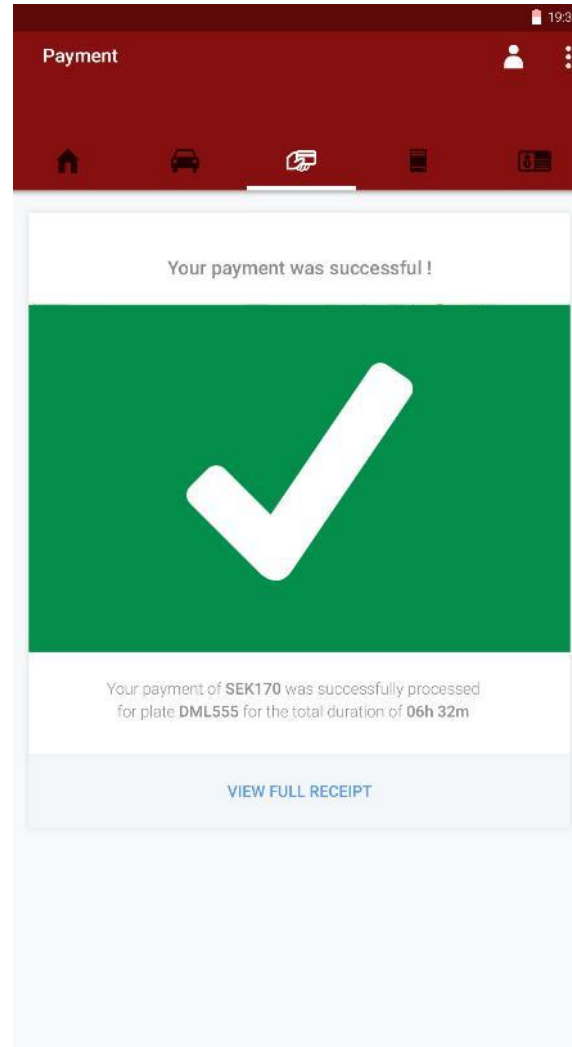
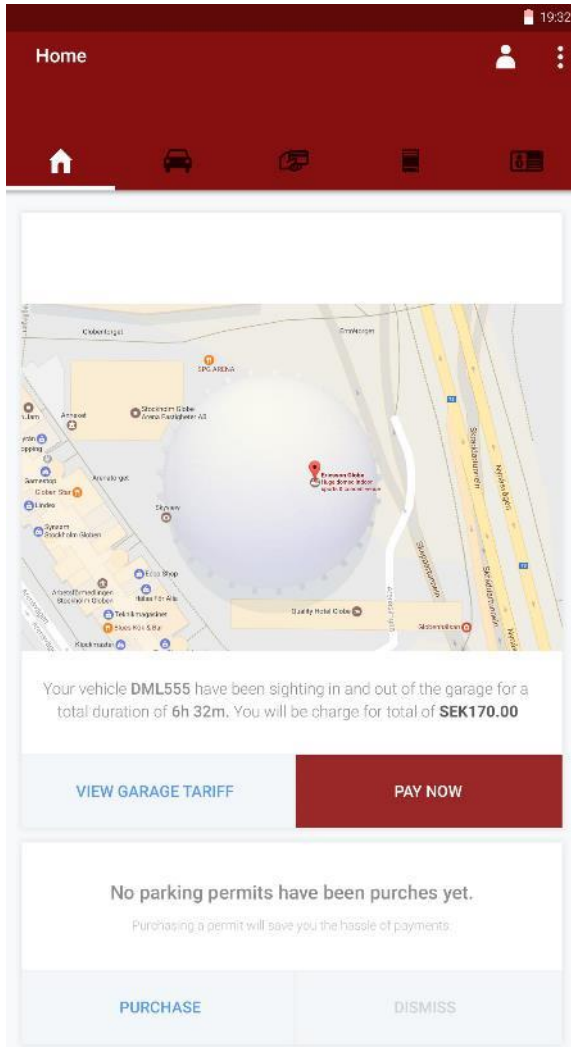


## WAY FINDING

Q-Free has pioneered the use of way finding systems and continues to develop innovative new solutions to help drivers and car park operators.



# Wayfinding and payment apps (Q1-18)





## New outdoor single space occupancy detector



- Competitive price.
  - "Buried sensor" applicable in all environments enabling efficient road surface maintenance including sweeping, snow removal, etc.
  - Ultra-low power technology enabling lifetime of battery for 9-10 years.
  - Highest industry accuracy: 98 – 99 % for tracking open parking spaces.
- 
- Auto calibration that ease installation and results in lower installation cost.
  - Bluetooth enabled for “find my car” future capability.
  - Designed for the future with Internet of Things (IoT) connectivity directly to future 4G and 5G telecom networks.

# PARQ ITS420 Preliminary data



- Operating frequency : 863-868MHz EUR, 915-921MHz US
- Operating frequency (IOT-NB) : LTE band 8 (optional band 5 and 20)
- Detection : Magnetometer and Radar
- Mounting : Buried in the ground, flush with the surface
- Snowplow resistant : YES
- Load resistance : Heavy traffic
- Mounting dimensions : Ø 110 mm
- Protection : IP67, completely sealed
- Color : Grey
- Operating temp : -40 ... +85°C
- Storage temperature : -40 ... +85°C
- Detection height : 0 ... 90 cm
- Communication range : 2000m (line of sight)
- Power supply : Built in lithium battery
- Expected lifetime : 5-10 years\*



# New outdoor single space sensor (Q4-17)



A main challenge for Smarter Cities concepts today is that each project needs a separate infrastructure to ensure wireless communication from sensors to the back office systems resulting in high infrastructure cost and potential frequency conflicts.

Two new international mobile standards for IoT were established in 2016 for the 4G network: Narrowband IoT (NB-IoT) and eMTC (enhanced Machine type communication).

Telenor and Q-Free are the first in Norway to use the new communication technology NB-IoT and our pilot was launched Jan 30<sup>th</sup> where our OSSS communicate directly with Telenor's base stations/4G network.



# Leading the way in Intelligent Transport Systems

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