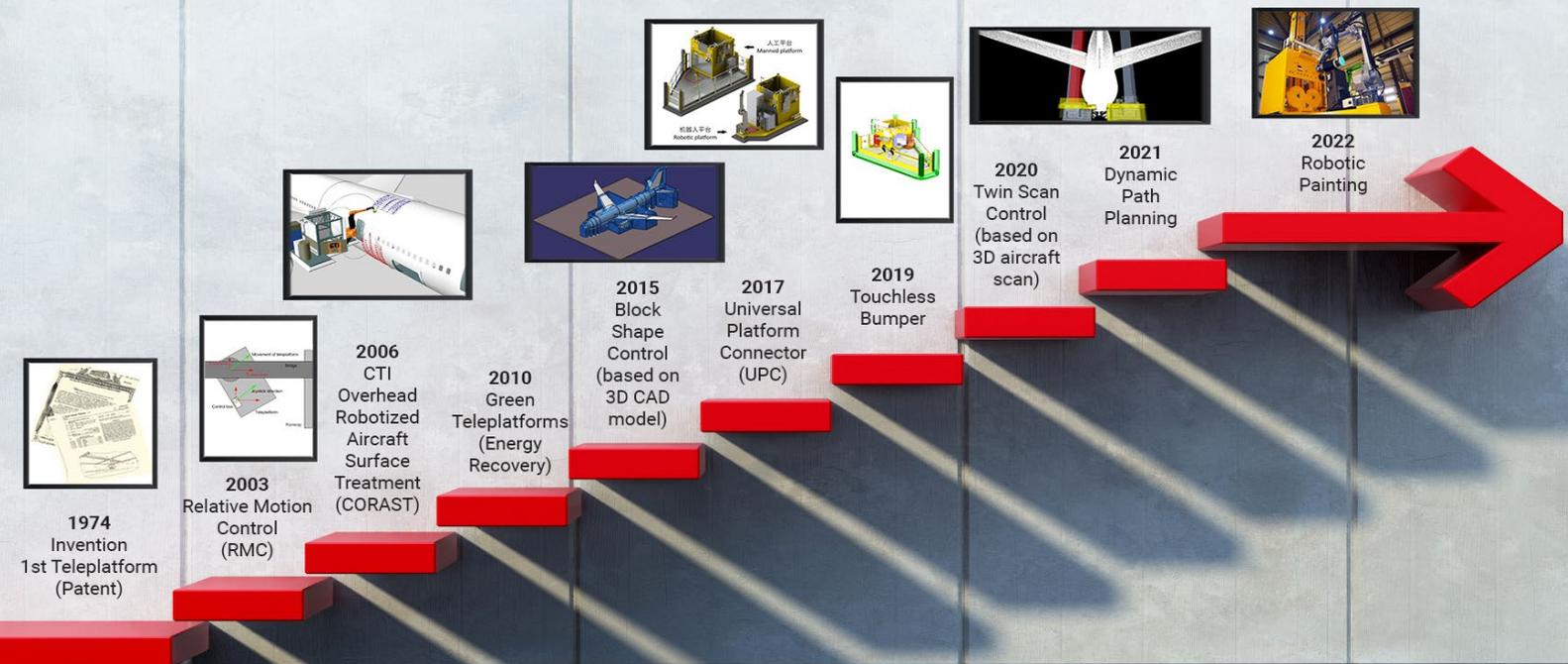


iTP - Designed to progress

# Evolution Timeline



## Introduction

Since our invention and patent of the teleplatform on 4th June 1974, CTI Systems has installed more than 250 units worldwide. CTI Systems never stopped investing in innovative technologies and is recognized to be a trendsetter for the deployment of new features to make the product safer, more efficient and more ergonomic to operate.

iTP – Our newly launched „intelligent teleplatform“ family results from these continuous efforts and brings the product to an unprecedented level, through smart integration of a number of recently developed digital features.

### Striving for Zero Collision

CTI Systems is able to provide intelligent solutions aiming to avoid any physical contact between teleplatform and aircraft. These new solutions assist the operators and allow them to concentrate on the works to be performed rather than on the pure steering of the equipment. This is achieved by adding an extra layer of safety compared to traditional sensor based technologies. The benefit is an increase of efficiency combined with a considerable reduction of overall operation costs of the facility.

The new features range from a proximity recognition hardware solution up to sophisticated software based distance control systems using in its high-end version optical 3D shape acquisition of the aircraft outer shell.

# Overview on Aircraft Distance Control Technologies by CTI Systems

Aircraft proximity detection

## Touchless Bumper

Based on line sensors embedded in teleplatform bumpers

Intersection detection between teleplatform & aircraft

## Block Shape Control

Based on aircraft 3D CAD model

## Twin Scan Control

Based on full 3D aircraft scan

Ready for tomorrow's challenges

Dynamic Path Planning

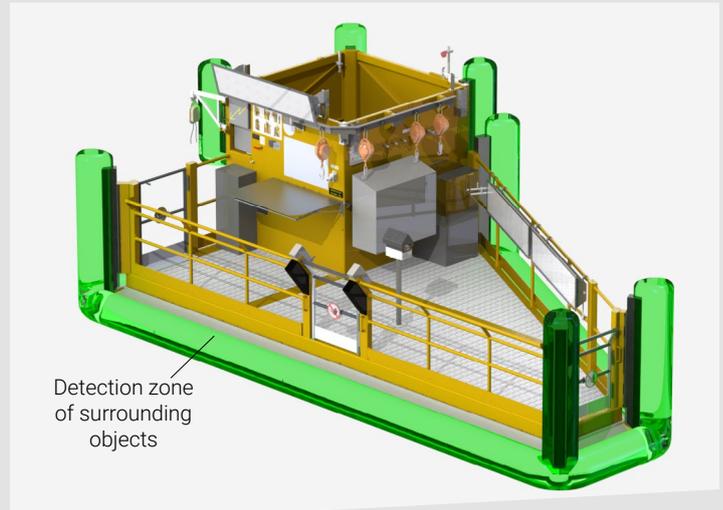
Robotisation



# Aircraft Distance Control Technologies

## Touchless Bumpers

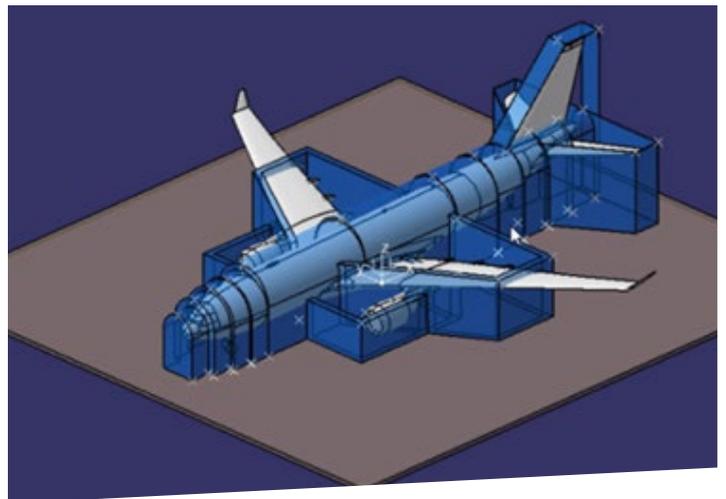
The **Touchless Bumper** is a more advanced version of the traditionally used sensor based peripheral bumper. The new bumpers allows to trigger the low speed motion at a distance from the aircraft outer shell without getting in contact with the aircraft skin.



Moving with care ...

## Block Shape Control

CTI Systems firstly introduced the concept of the **Block Shape Control** In 2014. This software based feature consists of an automatic limitation of the motion speed of a teleplatform when entering the pre-programmed CAD 3D model based virtual safety zone around the aircraft.



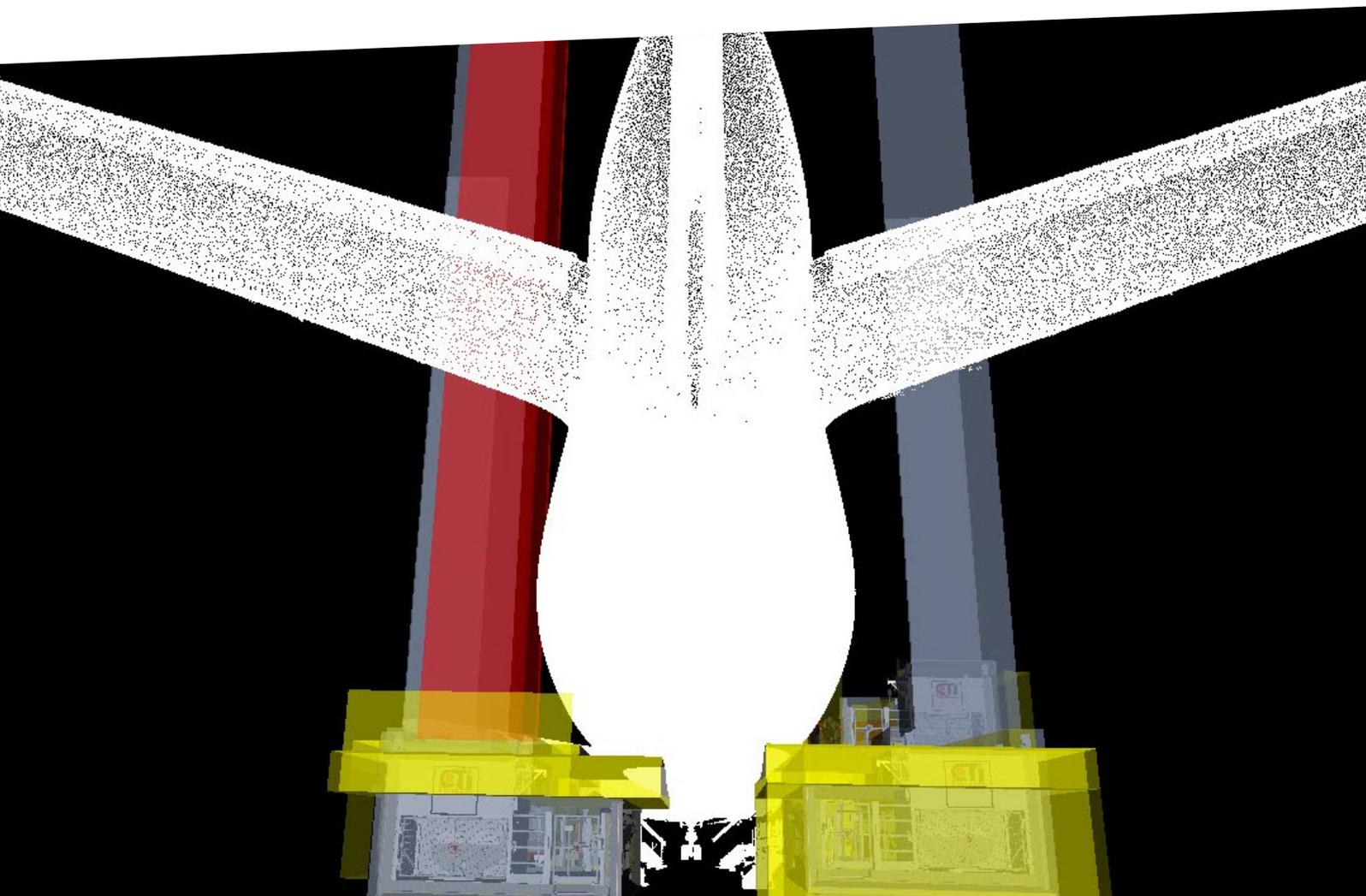
Operating with confidence ....

## Twin Scan Control

In 2020, CTI Systems successfully completed the development of its **Twin Scan Control** technology, allowing for highest precision in approaching the aircraft.

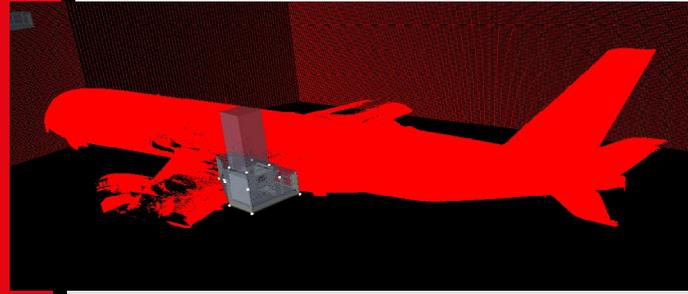
This system is based on a full scan of the aircraft and does not only automatically limit the motion speed of the teleplatform, but also brings the equipment to a full stop at a pre-set distance, thus avoiding to touch the aircraft shell.

This technology has been deployed to a first hangar in Europe, to the full satisfaction of the operators.



## Dynamic Path Planning

As an extension module of the Twin Scan Control technology, CTI Systems currently develops a Dynamic Path Planning (DPP) software able to reproduce trajectories commonly used by the teleplatform during paint process. It controls dynamically, in an automated manner, motion sequences for teleplatforms following the contour shape of the aircraft.



## Robotisation

As an extension module of the DPP technology, robots embedded on intelligent teleplatforms mark the breakthrough to achieve a fully automated aircraft painting process, with the potential to revolutionise the aircraft painting business in its entirety. The ultimate goal will be to set new standards in relation to paint quality taking fully into consideration environmental aspects like a reduction of paint spillage due to overspray.

Designed to take control ...



# Overview

Technological Features	Touchless Bumper	Block Shape Control	Twin Scan Control
Reduction of risk of collision at high speed	✓	✓	✓
Retrofit compatibility	✓	✓	✓
3D visualisation	-	✓	✓
Full stop functionality	✓	-	✓
Real aircraft outer surface acquisition	-	-	✓
Best-in-class approaching distance accuracy	-	-	✓
Antenna & pitot tube detection	-	-	✓
Possibility of upgrade to dynamic path planning & robotisation	-	-	✓
Track & Trace	-	-	✓

Together we will find the solution best suiting your specific needs.

We look forward to hearing from you.

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