

ARTIFICIAL VISION EXCELLENCE



THE MISSION: **GUARANTEE THE HIGHEST PRODUCTION PROCESS QUALITY THROUGH ARTIFICIAL VISION**

Strategy:
be leader in specific
market segments

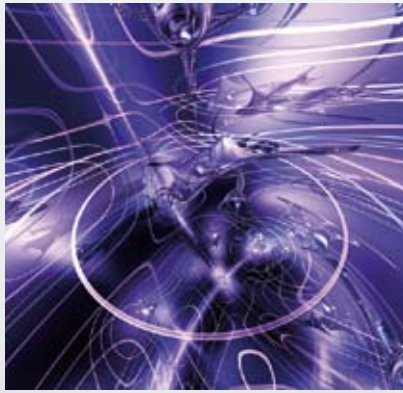
Every day we work to improve our leading position in specific manufacturing sectors through differentiation and devoted project to the Customer. We focus on excellence, growth and innovation; our mission is to find solutions for our Customer's needs.

Excellence: technological excellence and first class Customer service through continuous innovation.

Growth: to develop a sustainable and profitable growth in domestic and world Market.

Innovation: to create an added value for the Customer with innovative ideas in everything we do.





Artificial vision

Artificial vision is a fascinating and complex whole of processes that aim to create an approximate model of the real world departing from bidimensional images. Seeing is not only the acquisition of a bidimensional photo of an area, but above all the interpretation of the content of that area: Image Processing.

An artificial vision system is constituted by the integration of optic, electronics and mechanics components that allow to acquire, to record and to elaborate images. The result of the elaboration is the recognition of specific characteristics of the image for various finalities like control, classification, selection.

Vision systems are formed by the object to examine, the system of acquisition and elaboration of the image, the interfaces man-machine, the interfaces with the external environment.

The parts to be inspected are positioned through moving systems in front of the cameras and illuminate in appropriate way, in order to underline as much as possible the defects to be detected. The optic system forms an image on the sensor of the camera that produces an electric signal in exit. This signal will be digitalized and memorized.

The image, captured and made for a "comprehensible" way for a computer, can then be processed with a software that includes special algorithms and analysis, capable to individualize the characteristics of the image and to amplify some aspects - for instance contours, edges, shapes, structures - with the purpose to perform the controls and the inspections for which the system was conceived.

Based on the elaboration results, the system takes decisions regarding the object destination, for instance to sorting the pieces among the "good" or "scrap" ones and it will provide the relevant information to the production processes.

UTPVision designs, manufactures and sales automatic image processing equipments for the quality control of different types of components and large productions series.

UTPVision combines Real Times control systems with image Elaboration Systems guaranteeing both high performances and excellent stability during the whole process of control.

The continuous research and development activities together with the most recent digital technologies allow both versatility and achieve the highest standards required by the currently market.

UTPVision intends to make available for the customers these specific experiences so that the project will be integrated with every single reality.

UTPVision guarantees the maximum flexibility, adapting to specific Customer's requirements. All activities can be conducted independently or in collaboration with the Client.

UTPVision intends to establish with customers a trusted relationship, based on the confidentiality of the information, on the punctuality in the respect of the assumed commitments.

UTPVision above all intends to disclose its long experience inside industrial structures and laboratories of research.





Customer focus

We want to be the first choice solution provider in our selected markets. Our decisions are taken with the orientation to the Customer. Working in partnership; we ask ourselves the goal of creating added value for Customers and UTPVision. On a daily basis, we prove our Customer Focus by:

- listening to the markets to understand, anticipate and address the demands and expectations of Customers
- establishing long term relationships with Customers for mutual benefit
- providing advanced solutions with excellent levels of service and quality
- delivering on our promises and our commitments.

The success of our Customers is our success.

We are a manufacturer with a passion for detail that provides an essential support to the ultimate success.

Performances

We are focused to offer highest performances to the Clients.

The value "Performances" doesn't define only the results but also how to achieve them. On a daily basis, we demonstrate Performance by:

- take personal responsibility for individual results and goals
- continuously improving our work and always respecting our appointments
- promoting a culture based on the continuous improvement in the short as well as medium and long term
- defining clear objective, appraising our performances and providing a continuous feedback.

Innovation

We promote a culture and an innovative approach.

We think differently and our goal is to be innovative and creative in every activity.

Innovation is essential for our growth in terms of financial, leadership and benefits for the customer.

In our job, the innovation is expressed:

- developing innovative solutions to solve the customers problems
- distinguishing us thanks to the development of materials, processes, products and services
- implementing profitable changes and improvements
- sharing our experience and knowledge through a teamwork, promoting the team spirit
- accepting every challenge and always wondering why our choices.

Responsibility

We are all responsible of our Company and its results. Ranging efforts to maintain the excellent reputation of our company. On a daily basis, we demonstrate Responsibility by:

- respecting the culture, customs and laws of the Countries where we operate
- ensuring to all the parties an open and direct dialogue
- supporting our ideas always with courage
- take personal responsibility for our actions
- being involved in the environment and feel responsible as citizen
- assuring safety in the workplaces and products
- working at the best level of our ability and with integrity.



The history

In 2004 the **UTP S.r.l.**, a company engaged in the engineering and manufacturing of special equipments for the mechanical industry, decided to develop a new industrial application combining Real Time control systems with Image Elaboration Systems. The outcome was **UTPVision**.

The specific knowledges merged in the development of its vision systems include:

Design and construction of equipments

- Systems of manipulation and positioning
- Systems of assembling
- Test Bench

Simulation and calculation

- Kinematic schemes
- FEM analysis static and dynamics
- Multibody analysis of systems and kinematics
- Parametric optimizations and topologicals

Electric and electronic design

- Electric and electronic schemes
- Signals elaboration

Elaboration and control software

- Process parameters
- Algorithm elaboration

The current know-how of UTPVision ranging from systems of control hard real-time on PC based to sophisticated algorithms of Image Processing supported by traditional techniques of artificial vision.

In today market **UTPVision** counts a very large fleet of machine in the field of the artificial vision for the elastomer articles and many other vision systems for special applications. Our clients are distributed in different geographical areas and are business leader in their fields.

The combination of the experiences and the development of **UTP** and **UTPVision** synergies is the basis of technical competence and development for the future.



Why UTPVision?

Our systems, equipments and components are tailored to the needs of the Customers and are the result of many years of experience in the acquisition and processing of digital images.

The know-how comes from several industrial applications in different fields and various kind of products.

The technology applied to our production is always cutting edge, high quality and reliability.

UTPVision staff have access to experts in every field of the components for the development of vision systems: mechanics, electronics, software, optics and ligthings.

Regarding the customer service we have analyzed, shared and solved the problems working alongside the technicians of the best companies.

Companies that work according the guidelines of the ISO 9000 and of the ISO TS16949 need to install automatic control systems to avoid the limits of the human control. The visual inspection of parts by operator is incomplete due to the loss of concentration of the subjects, is subjective as it regards the repeatability of the results, is expensive compared to an automatic control system..

The future

Today UTPVision commitment is to meet the challenges of the global market. The desire to promote the controls and vision systems beyond the boundaries of the historical markets is one of the prerogatives of the Company.

Providing technical assistance and design, with excellent service and timely to consolidate partnerships with the Customers.

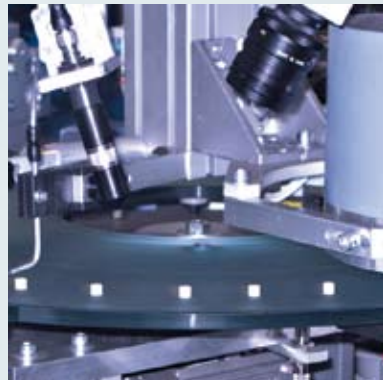
We are not just a supplier, but we want to become a part of the chain of design, manufacture and testing of Customers' products.

The market

World is changing so rapidly, that it becomes impossible to establish what changes will affect our society, our company and we as human being in the next future.

UTPVision philosophy is to look at the market to 360°, to be interested and available to evaluate the implementation of new projects in the market of the rubber articles and develop our systems for articles in different material: for instance plastic and thermoplastics, metals, special materials, assembled articles.

The market's requirements will be our new challenges of the future.



The strenght points

Artificial vision systems provide the integration of the quality control with the production management. Today these two factors constitute the success of the Companies. With the **UTPVision**'s systems provide the ideal solution.

The **reduction of business cost** for staff dedicated to final inspection of the production is one of the strategic factors for the Companies. **UTPVision** provides high-level performances of control with negligible costs.

The **maintenances** will be **irrelevant** when compared to the speed of control and thus the economic influence on the production and quality processes.

With the word "Control" we intend **100% control** of the parameters of all the produced pieces in order to select them for surface and dimensional defects.

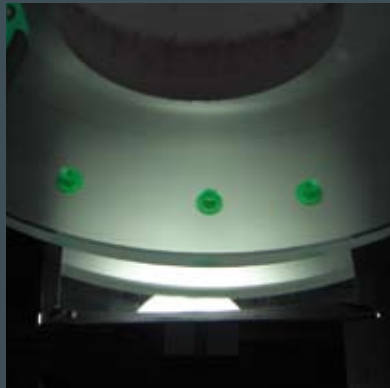
The **results are reproducible** on the next batch, you can document them, they are commonly found in statistical form and they are traceable for every following quality control.

Experience working with several leading Customers in the rubber sector has enabled us to develop **complete and complementary** solutions, practical and efficient for dimensional controls and for packaging.

Together with our Clients we have lived the evolution of the market and the quality requirements. We grew up together and now the automatic controls are a pillar in the quality control process.

Our approach to the control begins with the analysis of the production defects and carry out tests to find the appropriate system to the problem. Then follows a full technical report for the proposed best vision system taking in consideration the parameters of Customer's productivity.

The technical documentation that follows the supply is always of high-level and operators are supported by the **UTPVision** technical experts.



Benefits of control

The **UTPVisions'** systems are designed for the 100% inspection of articles by dimensions, superface defects and other irregularities of the product. Depending on control's specification defined by the Customer, we selected the more proper vision equipment to be used.

The pieces are then automatically separated in various categories of quality to be analyzed and subsequently shipped, scraped or reworked.

For these reasons vision systems are especially required by Companies that operate in technologically advanced sectors as security, gas control, automotive and medical, where the qualitative requirements are high-level.



The advantages are many:

The systems are modular and flexible. We start from a basic version for the generic controls to reach the most evolved version for more sophisticated controls, passing through intermediate versions. All the visual inspection machines can be implemented with components and additional modules. For special types of control the software are integrated and adaptable to new demands.

The systems are suitable for production batch with large quantities and they guarantee a high-performance. Our systems are capable of controlling up to 10 pieces per second depending on the size and characteristics of the pieces. Thanks to proper loaders specifically developed for this purpose, our equipments guarantee the possibility to work 24 hours a day. For that reason the investment for the purchase of a vision system has a rapid return.

The systems are all integrated with statistical analysis program that support the operators with useful information for the optimization of the productions. Data can be printed or electronically transferred to other users.

An important advantage is the classification of the products quality. The system determines the different quality grade inside a batch by dividing the pieces in different classes. It's therefore possible to separate parts of the batch for reprocessing or to perform a second control with modified parameters.

The systems can save the formulations of control in the memory for each item and to recharge it in future for every following lot of the same article. This ensures the repeatability of the control at any time without external influences. Changing from one product to another is very fast.

The standard maintenance is very simple and trained operators will be self-sufficient in managing the system.

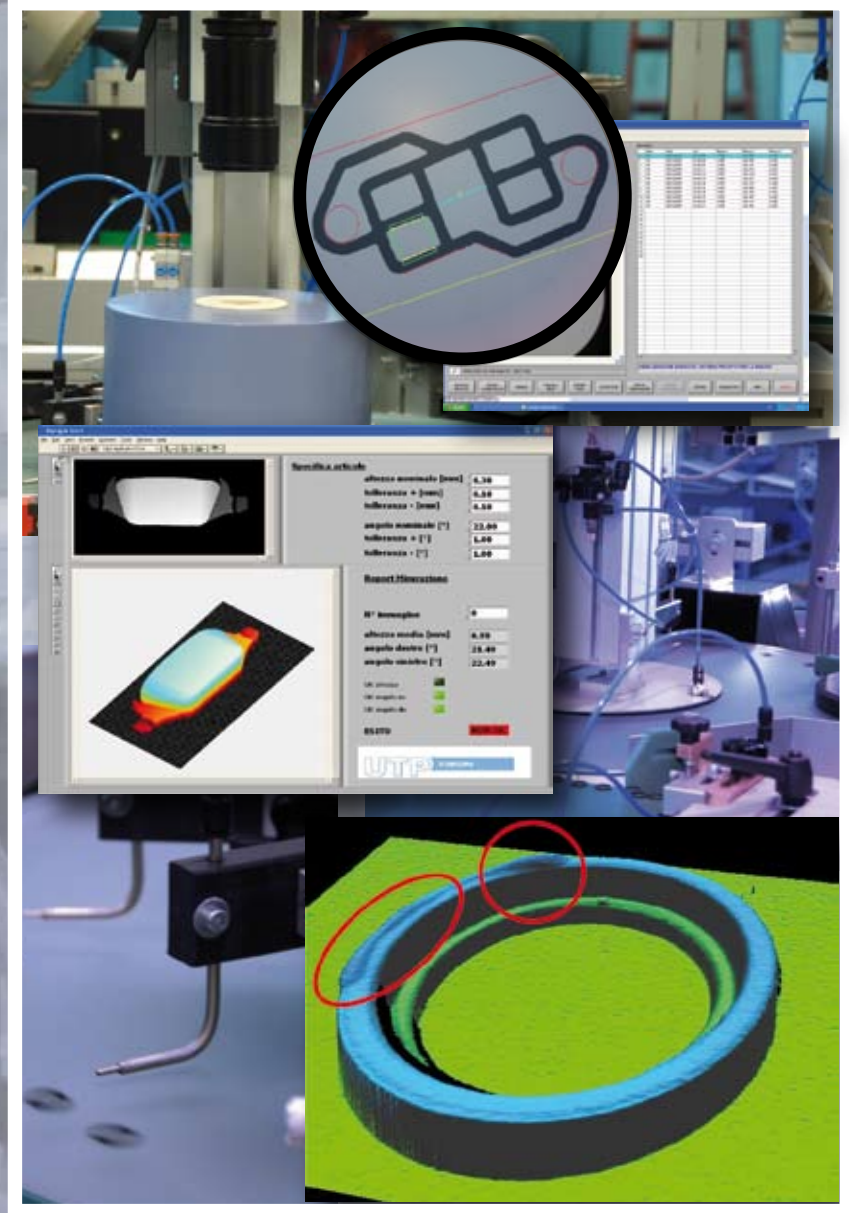


UTPVision is divided in three production lines:

Equipments for dimensional
and automatic visual inspection

Equipments
for 3D control

Special equipments
and applications





VISUAL INSPECTION EQUIPMENTS FOR DIMENSIONAL AND SURFACE DEFECTS CONTROL

MATLIX

Matlix is a simple visual inspection machine for the dimensional and surface control of circular and other shaped items. Matlix is able to check the surface of pieces to identify main defects as cut, flash, lacking material, holes and halos, doble-mouldings, roundness, concentricity, etc...

SCRAPPPIX

Scrappix is an innovative visual inspection machine for the dimensional and surface control of circular and other shaped items. Scrappix is the most advanced product today and is able to check all the piece surfaces and detect all the product defects.

Both equipments are controlled by a PC managed by an operating system Real-Time (RTAI-Linux) that performs both the images processing and the interaction with the operator through simple and intuitive windows interface. The images are captured by digital industrial cameras and are transferred, without loss or interference to the PC through Firewire connection. The loading unit handles the pieces to check on a conveyor belt where a motorized switchman transfers the pieces on the rotating tables. The machine can be used for the control of high-precision gaskets in rubber, PTFE, metal and other materials within the limits of the vision field.

EQUIPMENTS FOR DIMENSIONAL CONTROL

KALIX

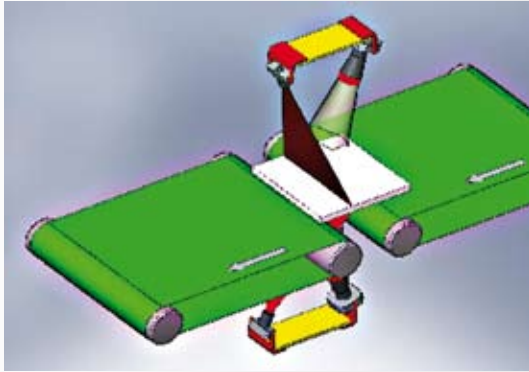
Kalix are machines for the automatic no-contact measurement of parts and items of any shape, trough manual loading and unloading. Measuring without contact means that the machine is able to measure dimensions using artificial vision systems and to get the required information directly from the images. These inspection instruments are used to control rubber gaskets, PTFE, metal parts and many other materials within the limits of vision field. Operation is recommended throughout the production process, the acceptance of every working phase and for the final certification in laboratory for samples and production series.

FEATURES

Kalix are equipped with a firewire camera with a resolution up to 5 MPixel and have a field of view up to 160x160 mm, bi-telecentric lenses low distortion and a collimated light. The software allows to set and store the parameters for every single article so they can be used the subsequent batches.

For characteristics and details of vision systems please refer to the single brochures in the download area of the web site www.utpvision.it

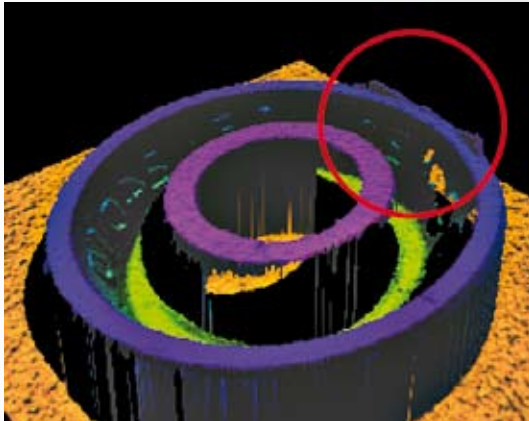




EQUIPMENTS FOR 3D CONTROL

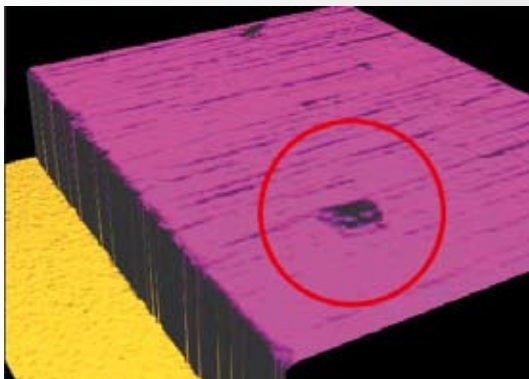
3D vision

3D technology used by UTPVision is essentially based on the principle of triangulation between a coherent light source and a 2D vision camera. In practice one or more blades of laser light pass on the object of which we want to acquire the 3D image, while the software inside the vision camera reconstructs the three-dimensional image. 3D vision draws the laser profiles along the transversal sections of the object (obtaining the variations of the reflection angle).



Advantages of 3D vision

The main advantages offered by 3D vision are related to the dimensional and geometrical measurements. It is therefore possible to evaluate if the form of an object is conforming to the original one or to the dimensional specifications.



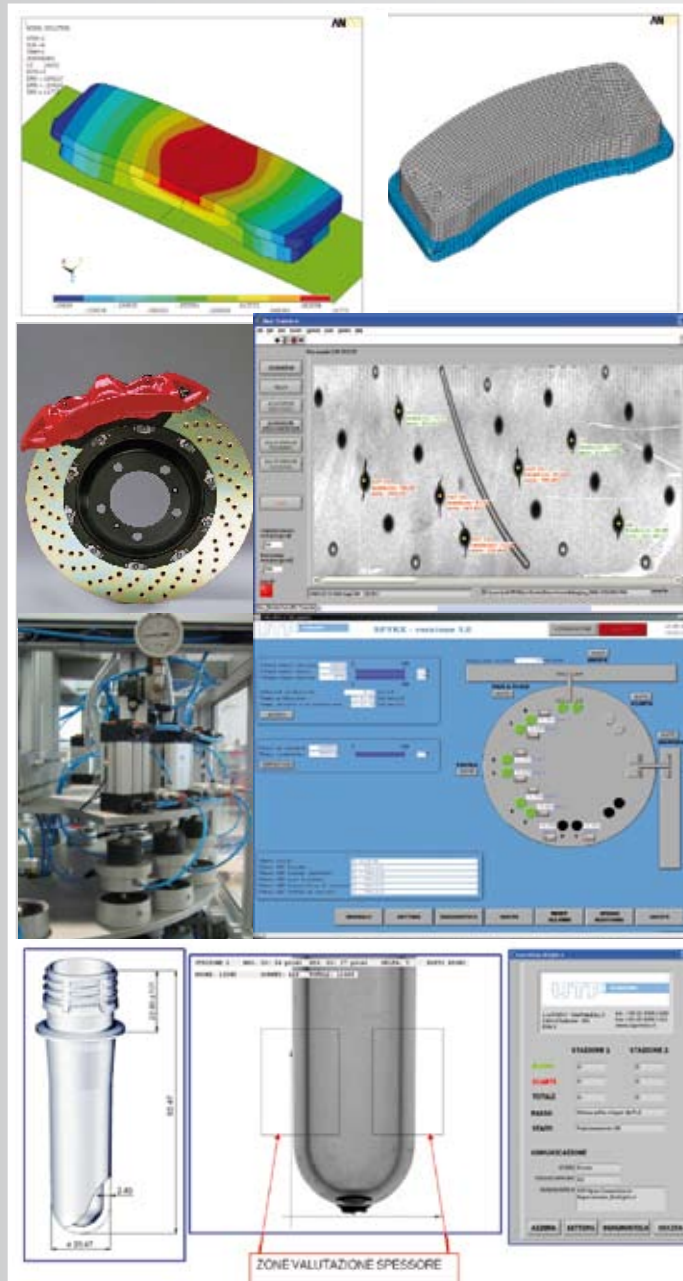
3D Equipments

UTPVision design and built three-dimensional vision systems and related software for various industrial applications. These equipments can be provided for a single and specific employment or (as optional) can be mounted on the inspection machines Matlix and Scrappix in case they are required because of a problem of defect visualisation.

SPECIAL EQUIPMENTS AND APPLICATIONS

UTP Vision designs and manufactures special equipments for specific applications required by the Customers. It's co-design of vision and control equipments for industrial applications, required and developed in collaboration with the research and development department of the Company.

Following some demonstrative examples.



Automotive Brake Pads:
Automatic control of compressibility and evaluation of the answer in frequency

Disk brake:
evaluation of crack's advancement

Equipment for diaphragms
automatic control:
test pressure
to evaluate possible losses of load

PET preforms:
thickness control

Organization

Managing Director: Mario Regazzoni

Technical Manager: Roberto Finazzi

Mechanical & Plant Manager: Walter Fiammarelli

Research & Development: Valeria Rosati

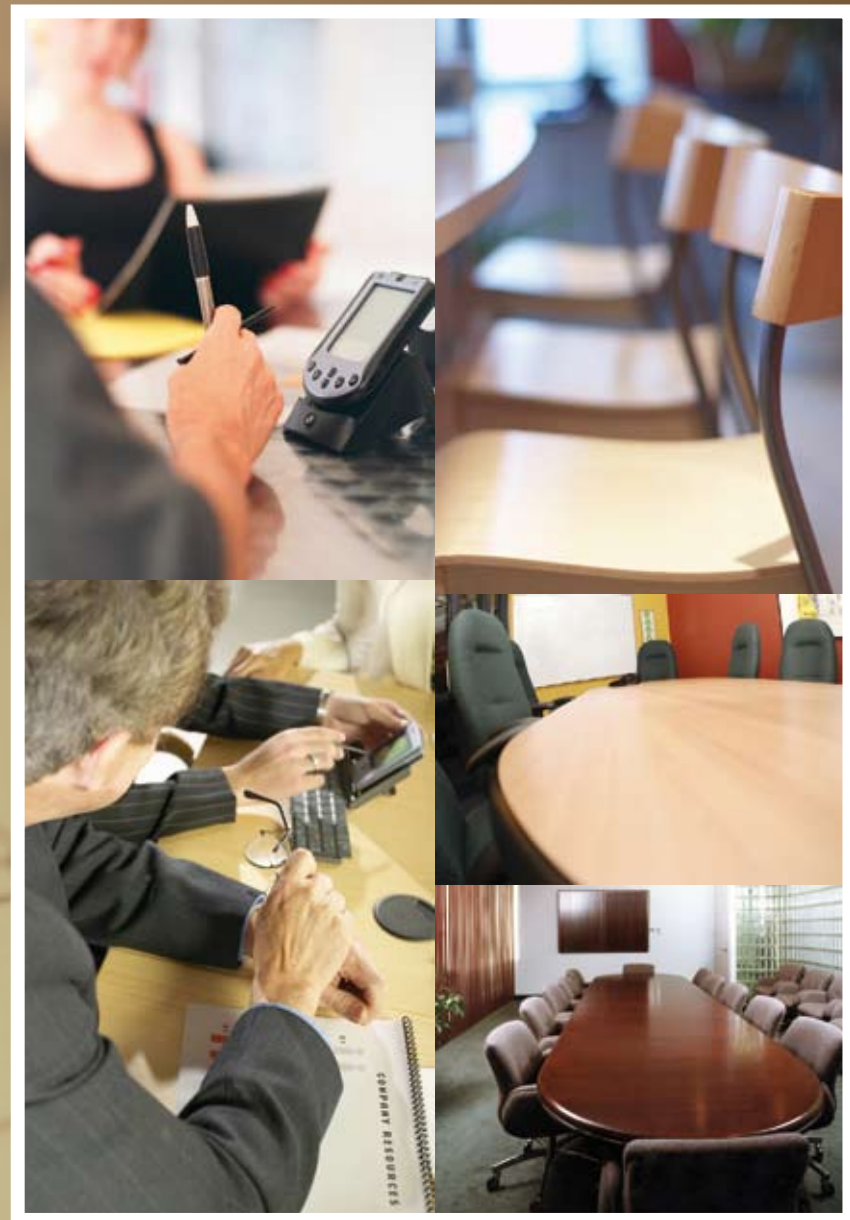
Purchasing & Logistic Manager: Alberto Fettolini

Financial Manager: Gianluca Carsana

Sales Manager: Franco Rossi

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Where we are

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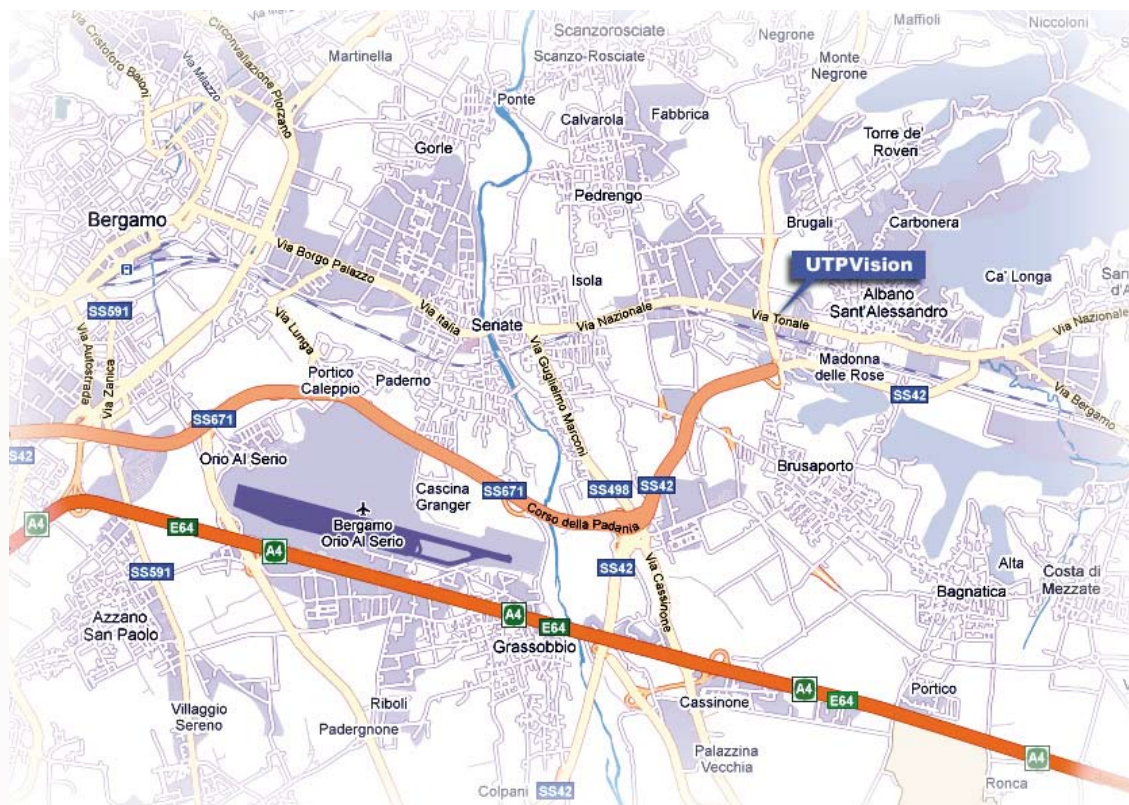
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