

Navy
instrumentation



Based in Aix-en-Provence, France,
Atos engineers design, manufacture and
sell electronic navigation equipment
for maritime forces and merchant fleets,
under the BEN Marine brand.



Navigating efficiently with robust and proven equipment



With its experienced engineers, Atos ensures product reliability, compliance with civilian and military standards, constant innovation and adaptation to your requirements.

BEN Marine: excellence through experience

Heir of the Julien navigation instruments workshop in Marseille (Bianchetti, brand dating from 1822), BEN Marine was established in 1962 to develop electromagnetic speed logs and flowmeters. Today BEN Marine is a registered Atos brand and operates in over 40 countries around 50 distributors.

BEN Marine navigation instruments

In response to requirements in different countries, BEN Marine controls the product certification process in compliance with current standards (Wheelmark, Russian Register...). BEN Marine's team of technical specialists and Service Partners worldwide provides it with a strong responsiveness and capacity to take action.

Logistic and Service supports

In order to guarantee the critical systems' lasting security and compliance, Atos has developed a unique expertise in Integrated Logistics Support (ILS) and In-Service Support (ISS).



Summary

| | |
|---------------------------------|----|
| ▶ EM speed log | 4 |
| ▶ Repeater | 6 |
| ▶ Sensor and hull fitting | 10 |
| ▶ Sensor | 12 |
| ▶ Flow measurement | 13 |
| ▶ Compass | 14 |
| ▶ Diver compass | 15 |

LMN5

EM speed log

Naval electromagnetic speed log

Single or dual axis speed measurement.

The LMN5 electromagnetic log perfectly meets the climatic, mechanical and radio electrical resistance standards applicable to the equipment on board the Navy ships. The LMN5 electromagnetic log includes an electromagnetic sensor, a processing unit, a repeater and a programming console.



CHARACTERISTICS

Interfaces

- ▶ Inputs/Outputs (accessible through the corresponding connectors):
 - 28 Vdc power supply or other,
 - inductor/electrode sensor data,
 - 2 x 1/200 nautical mile potential free contact output*,
 - 2 x 1/10 nautical mile potential free contact output* or alarm function threshold,
 - 2 x programmable 1/200 or 1/100 or 1/10 nautical mile inputs*,
 - 1 x potential free contact alarm output*,
 - 1 x RS422 output, IEC 61162-1,
 - 2 x RS422 output to dialog with the repeater.

(*) breaking capacity 24 Vdc - 250 mA

Options

- ▶ 1 x programmable synchro output (5 VA - 400 or 60 Hz)
- ▶ External Commutation and Distribution
- ▶ Cabinet CDC
- ▶ 5 x RS422 outputs IEC 61162-1 or for user subsystems (in option only in « 1 sensor » version) including 2 sensors commutation functions
- ▶ External digital/synchro cabinets - 1 to 5 synchro outputs - 5 VA each - 400 or 60 Hz
- ▶ 1 x current output, 0 - 500 μ A or 0 - 10 Vdc (programmable full scale)

Performance Data

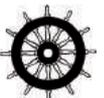
- ▶ Measurement scale: \pm 60 knots
- ▶ Speed:
 - speed indicators resolution: 0.1 knot,
 - speed accuracy: 0.1 knot for speed < 10 knots and 1% for speed > 10 knots,
 - damping time constant: 4, 16, 32 seconds,
 - sampling period: 8 Hz,
 - electronics linearity: instrument accuracy 0.1 % of full scale reading,
 - zero stability: 0.04 knot,
 - measurement reliability in laboratory: 0.1 % of full scale reading.

- ▶ Distance:
 - scale : 0 to 99,999.9 nautical miles,
 - accuracy better than 0.1 nautical mile whatever the speed,
 - speed simulation.
- ▶ Standards:
 - French Navy according to Mil GAM EG 13,
 - Wheelmark IEC 60945, IEC 61023, IEC 61162-1, IEC 62288, Type Approval 96/98 EC, SDME (Speed and Distance Measuring) device standard for ship speed log LMN5.
- ▶ Power supply: 115 Vac or 230 Vac, 50/60 Hz or 28 Vdc
- ▶ Power: 25 W

DIMENSIONS

- ▶ Main cabinet length: 270 mm
- ▶ Main cabinet width: 311 mm
- ▶ Main cabinet depth: 124 mm
- ▶ Main cabinet weight: 19 kg

IMO Type approval - Wheelmark
by Bureau Veritas



LMN5 DUO

EM speed log

Naval electromagnetic speed log

LMN5 DUO includes two electromagnetic sensors: one is positioned to port, the other to starboard. Both sensors operate simultaneously and independently from each other. The calculation of the average speed of the two sensors improve significantly the accuracy of the speed when turn or in strong lateral currents. Configuration provides redundancy and back-up sensor in case of failure.



CHARACTERISTICS

Interfaces

- ▶ Inputs/Outputs (accessible through the corresponding connectors):
 - 28 Vdc power supply or other,
 - 2 x inductor/electrode sensor data,
 - 2 x 1/200 nautical mile dry contact output*,
 - 2 x 1/10 nautical mile potential free contact output* or alarm function threshold,
 - 2 x 1/200 or 1/100 or 1/10 programmable dry contact outputs*,
 - 1 x dry contact alarm output*,
 - 3 x RS422 output, IEC 61162-1,
 - 1 x RS422 output, IEC 61162-1 for port sensor,
 - 1 x RS422 output, IEC 61162-1 for starboard sensor,
 - 2 x RS422 output for proprietary dialog with the dashboard calculator,
 - 1 x RS422 input/output for proprietary dialog with the dashboard calculator,
 - 1 x RS422 input/output for proprietary dialog with the programming console.

(*) interrupting capacity 24 Vdc - 250 mA.

Options

- ▶ Either 1 x 0 - 500 μ A analog current, 0 - 10 Vdc
- ▶ Or 4 - 20 mA analog voltage output (programmable full scale)
- ▶ 1 x Ethernet Module (to be defined acc. to specifications)

Performance Data

- ▶ Measurement scale: \pm 60 knots
- ▶ Speed:
 - speed accuracy: 0.1 knot for speed < 10 knots and 1% for speed > 10 knots,
 - damping time constant: 4, 16, 32 seconds,
 - sampling period: 8 Hz,
 - electronics linearity: instrument accuracy 0.1 % of full scale reading,
 - zero stability: 0.04 knot,
 - measurement reliability in laboratory: 0.1 % of full scale reading.
- ▶ Distance:
 - scale : 0 to 99,999.9 nautical miles,
 - accuracy better than 0.1 nautical mile whatever the speed,
 - speed simulation.

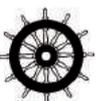
Standards:

- French Navy according to Mil GAM EG 13,
- Wheelmark IEC 60945, IEC 61023, IEC 61162-1, IEC 62288, Type Approval 96/98 EC, SDME (Speed and Distance Measuring Device) standard for ship speed log LMN5.
- ▶ Power supply: 115 Vac or 230 Vac, 50/60 Hz or 28 Vdc
- ▶ Power: 25 W

DIMENSIONS

- ▶ Main cabinet length: 270 mm
- ▶ Main cabinet width: 311 mm
- ▶ Main cabinet depth: 124 mm
- ▶ Main cabinet weight: 19 kg

IMO Type approval - Wheelmark
by Bureau Veritas



MFR12

Repeater

Multi-Function Color Repeater 12"

The multi-function color repeater displays alphanumeric data issued from one of the following sources:

- ▶ navigation network
- ▶ weather network
- ▶ weapon network
- ▶ any other specific displays, on request

Each repeater can display a unique screen page or a page chosen from a serial of pages for a given type of ship and network.



CHARACTERISTICS

The cabinet can be flush or bulkhead mounted. Data is displayed on a 12" TFT color screen. Available version:

- ▶ With a keyboard for menu and page selection

Each page can be displayed in daylight or moonlight brightness adjustment until complete extinction.

Interfaces

- ▶ Complying with EIA RS422 specifications (for standard version)
- ▶ NMEA 0183, IEC 61162 or customized protocol

Technical features

- ▶ Inputs:
 - 1 x RS232,
 - 1 x RS422,
 - 1 x Ethernet RJ-45.
- ▶ Outputs:
 - 1 x RS232,
 - 1 x RS422 (option).

Connection on connector

- ▶ Input/Output (RS422): Souriau socket male 14 points 851-02E12-14P50 with female plug 851-06EC12-14S50
- ▶ Power supply: Souriau socket male 3 points 851-02E12-3P50 with female plug 851-06EC12-3S50
- ▶ Ethernet: socket RJfield Amphenol Socapex RJF 21G with plug RJfield RJF 6MG

Maintenance

- ▶ BITE (Built-in test)
- ▶ 3 x internal led status
- ▶ Permanent autotest

Display Features

- ▶ Resolution or Pixel format: 800 x 600
- ▶ Brightness: 400 cd/m²
- ▶ Horizontal viewing range: 140°
- ▶ Vertical viewing range: 100°
- ▶ Contrast ratio: 600

Environmental Features

- ▶ Lighting (typical brightness quotient):
 - artificial light: 1000 lux,
 - daylight: 10 to 10,000 lux,
 - moonlight: 0.01 lux.
- ▶ Distance: 4 m
- ▶ Side angle view: 70°
- ▶ Vertical angle view: - 55 to 45° with this condition
- ▶ Storage temperature: -30 to +70 °C
- ▶ Operating temperature: -10 to +50 °C
- ▶ IP 56 in standard
- ▶ Power supply: 110 Vac - 50/60 Hz or 230 Vac - 50/60 Hz or 28 Vdc
- ▶ Power: 30 W

DIMENSIONS

- ▶ Length: 270 mm
- ▶ Width: 311 mm
- ▶ Depth: 124 mm
- ▶ Weight: 5 kg

MFR6

Repeater

Multi-Function Color Repeater 6"

The multi-function color repeater allows display of alphanumeric data issued from one of the following sources:

- ▶ navigation network
- ▶ wind network
- ▶ weapon network
- ▶ any other specific displays, on request

Each repeater can display a unique screen page or a page chosen from a serial of pages for a given type of ship and network.



CHARACTERISTICS

The cabinet can be flush or bulkhead mounted. Data is displayed on a 6" TFT color LCD screen. Two versions are available:

- ▶ With a keyboard for menu and page selection or
- ▶ With a touch screen for menu and page selection

Each page can be displayed in daylight or moonlight brightness adjustment until complete extinction.

Interfaces

- ▶ Complying with EIA RS422 specifications (for standards version)
- ▶ NMEA 0183IEC 61162 or customized protocol

Technical features

- ▶ Inputs:
 - 1 x RS232,
 - 1 x RS422,
 - 1 x Ethernet RJ-45.
- ▶ Outputs:
 - 1 x RS232,
 - 1 x RS422 (option).

Connection on connector

- ▶ Input/Output (RS422, dry contact):
 - Souriau socket male 14 points 851-02E12-14P50,
 - with female plug 851-06EC12-14S50.
- ▶ Power supply: Souriau socket male 3 points
- ▶ 851-02E12-3P50 with female plug
- ▶ 851-06EC12-3S50
- ▶ Ethernet: socket RJfield Amphenol Socapex
- ▶ RJF 21G with plug RJField RJF 6MG

Maintenance

- ▶ BITE (Built-in test)
- ▶ 3 x internal led status
- ▶ Permanent autotest

Display Features

- ▶ Resolution or pixel format: 800 x 600°
- ▶ Brightness: 400 cd/m²
- ▶ Horizontal viewing range: 140°
- ▶ Vertical viewing range: 100°
- ▶ Contrast ratio: 600

Environmental Features

- ▶ Lighting (typical brightness quotient):
 - artificial light: 1,000 lux,
 - daylight: 10 to 10,000 lux,
 - moonlight: 0.01 lux.
- ▶ Distance: 4 m
- ▶ Side angle view: 65°
- ▶ Vertical angle view :
 - 15 to 75° with this condition,
 - Speeding-up : 2.5 m/s,
 - Vibration: +0.25 mm (1 to 23 Hz),
 - Temperature : 0 to 50 °C,
 - Humidity : 80 %.
- ▶ Consumption: 35 Va
- ▶ Power supply: 110 Vac - 50/60 Hz or 220 Vac - 50/60 Hz

DIMENSIONS

- ▶ Length: 270 mm
- ▶ Width: 195 mm
- ▶ Depth: 230 mm
- ▶ Weight: 4 kg

MFR6 WP

Repeater

Pressure watertight multi function color repeater 5.7

This equipment is located outside the submarine hull and can withstand a pressure up to 45 bars. NMEA serial interface allows displays of several screen pages as: speed, depth, heading, trim, rudder angle and other parameters on request.

High pressure external cable and Pressure Hull Penetrator (PHP) can be provided on request with this repeater.



CHARACTERISTICS

- ▶ Power supply: 24 Vdc
- ▶ NMEA RS422 serial interface
- ▶ Operating temperature: -30 to +70 °C
- ▶ Test pressure: 40 bars (design: 50 bars)
- ▶ Horizontal and vertical angle view : $\pm 70^\circ$
- ▶ GISMA Series 22 underwater electrical connector (or other manufacturer on request)

- ▶ Standards:
 - MIL-STD-461E requirements (EMC)
 - STANAG 1008 NATO requirements (Electrical Power Systems)
 - STANAG 4141 NATO requirements (Shock)
 - NMEA 0183 standard

DIMENSIONS

- ▶ Length: 221 mm
- ▶ Width: 228 mm
- ▶ Depth: 165 mm with bracket
- ▶ Weight: 14.7 kg

IMO Type approval - Wheelmark
by Bureau Veritas



RGD100

Repeater

Digital speed and distance repeater

The RGD100 repeater displays data from a speed log through an RS232 or NMEA 0183 RS422 serial link. Data is displayed on a LCD screen. Speed is displayed in numerical and pseudo analog modes. Distance is displayed in numerical mode and can be reset by the operator.

CHARACTERISTICS

- ▶ The cabinet can be flush or bulkhead mounted
- ▶ Digital speed: 1/10 knot resolution
- ▶ Pseudo analog speed: 1 knot resolution
- ▶ Distance with reset: 1/10 nautical mile resolution
- ▶ Scale: -2 / +25 and -5 / +50 knots
- ▶ Case: IP55
- ▶ Power supply: 24 Vdc, 115 Vac or 230 Vac - 50 or 60 Hz
- ▶ Distance with reset: 1/10 mile definition
- ▶ Log status (test-high/low speed alarms)
- ▶ Brightness control (dimmer)
- ▶ Standard: IEC 61162-1

DIMENSIONS

▶ Length: 144 mm

▶ Width: 144 mm

▶ Depth: 200 mm

▶ Weight: 1.6 kg

IMO Type approval - Wheelmark
by Bureau Veritas



GALVA120

Repeater

Analog speed and distance repeater

Speed is indicated in analog mode and distance is displayed on a backlighted electromechanical counter.

CHARACTERISTICS

- ▶ The cabinet can be flush mounted
- ▶ Integrated backlight
- ▶ Lighting: 24 Vdc - 35 mA
- ▶ Inputs:
 - 1 x speed input: 0 - 500 μ A,
 - 1 x distance input: 1/10 nautical mile.

Option

- ▶ Scale: -2 / +16, -3 / +24 or 0 / +48 knots

DIMENSIONS

▶ Total diameter: 110 mm

▶ Card diameter: 97 mm

▶ Depth: 72 mm

▶ Weight: 0.5 kg

IMO Type approval - Wheelmark
by Bureau Veritas



130EB (for surface vessels)

Sensor and hull fitting

Electromagnetic sensor and hull fitting

130EB is fitted with 3 m cable and a junction box. It is designed according to an official French Navy Technical Specification N° 19064 LSM/NAV of April 1980.

CHARACTERISTICS

- ▶ Ejection sensor, replacement by diver

DIMENSIONS

- ▶ Sensor diameter: 210 mm
- ▶ Sensor length: 910 mm
- ▶ Sensor weight: 12 kg
- ▶ Hull fitting weight: 30 kg



IMO Type approval - Wheelmark
by Bureau Veritas



65MM (for surface vessels)

Sensor and hull fitting

Electromagnetic sensor and hull fitting

The 65MM sensor is fitted with a 20 m cable.

Three versions are available:

- ▶ One for dry cell
- ▶ One for wet cell (water ballast)
- ▶ One dual axis version (longitudinal and transversal speed)

Please refer to page 13 for the hull parts location.

CHARACTERISTICS

- ▶ Mounted into a hull fitting with the following options:
 - Screw-on type in bronze with valve (for wooden or plastic hull),
 - Weldable in inox with valve (for steel hull).
- ▶ Sensor: Retractable at sea (without drydock)
- ▶ Hull fitting 65 mm

Option

- ▶ Dual axis version: longitudinal and transversal speed

Sensor

- ▶ Diameter: 65 mm
- ▶ Length: 244.5 mm
- ▶ Weight: 5.1 kg

Hull fitting

- ▶ Diameter: 65 mm
- ▶ Length: 244.5 mm
- ▶ Bronze hull fitting weight: 9.5 kg
- ▶ Inox hull fitting weight: 9 kg



IMO Type approval - Wheelmark
by Bureau Veritas



LENS (for surface vessels)

Sensor and hull fitting

Electromagnetic sensor and hull fitting

The LENS sensor is designed to give the highest performance on double hull ships. It is available in dual axis version (longitudinal and transversal speed). It is built of epoxy resin, providing an exceptional lifetime to the equipment.

Please refer to page 13 for the hull parts location.

CHARACTERISTICS

- ▶ Sensor mounted into a hull fitting:
 - Either stainless (for steel hull),
 - Or aluminium (for aluminium hull),
 - Flush mounted type, ejectable by diver.
- ▶ Sensor:
 - Frequency: 8 Hz,
 - Voltage: 18 Vdc,
 - Inductor voltage: 50 mA,
 - Sensitivity: 1.4 miliohm / knot.

Sensor option

- ▶ Dual axis version: longitudinal and transversal speed

Sensor

- ▶ Diameter: 130 mm
- ▶ Length: 115 mm

Hull fitting

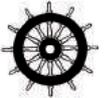
- ▶ Diameter: 184 mm
- ▶ Length: 115 mm

- ▶ Weight: 5.1 kg

- ▶ Steel hull fitting weight: 11 kg

- ▶ Aluminium hull fitting weight: 3.7 kg

IMO Type approval - Wheelmark
by Bureau Veritas



130FIMN (for submarines)

Sensor and hull fitting

Electromagnetic sensor and hull fitting

130FIMN is a fix sensor to be installed on submarines, built in stainless steel, including a waterproof plug for underwater connections. It supports 60 bars pressure.

CHARACTERISTICS

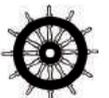
- ▶ Ejection sensor, replacement by diver

DIMENSIONS

- ▶ Diameter: 235 mm
- ▶ Depth: 108 mm
- ▶ Weight: 10.5 kg



IMO Type approval - Wheelmark
by Bureau Veritas



SM2000

Sensor

Smart sensor

The SM2000 electromagnetic sensor is fitted with 3 m cable, with connectors. This is an intelligent and adjustable sensor.

It meets the climatic, mechanical and radio electrical resistance standards applicable to equipment onboard navy ships. It can also be integrated in ROV (remotely operated underwater vehicle).

SM2000 consists of:

- ▶ One smart sensor
- ▶ One 3 m cable with connectors



CHARACTERISTICS

- ▶ Interface RS422 NMEA 0183 format
- ▶ Power supply: 12 Vdc to 16 Vdc
- ▶ Output: 1 x RS422 NMEA 0183 format communication
- ▶ Input: 1 x RS422

Options

- ▶ RS422 customer's format on request
- ▶ Possibility to add an external DCC (distributor and commutation cabinet)

DIMENSIONS

- ▶ Diameter: 64 mm
- ▶ Depth: 92 mm
- ▶ Weight: 2 kg

DN33

Flow measurement

Electromagnetic flowmeter

The DN33 flowmeter is designed to be fitted with a compact or remote electromagnetic sleeve sensor type. This sleeve sensor with customized flanges allows flow measurements of all conductive liquids.

CHARACTERISTICS

- ▶ Storage temperature: -20 to +80 °C
- ▶ Operating temperature: -5 to +60 °C
- ▶ Water speed: 0.2 m/s to 20 m/s
- ▶ Power supply: 28 Vdc
- ▶ Power: 10 W

DIMENSIONS

- ▶ Total diameter: 99 mm
- ▶ Depth: 267 mm
- ▶ Length: 164 mm
- ▶ Weight: 3 kg

DUS50

Flow measurement

Ultrasonic flowmeter

The DUS50 flowmeter is designed to be fitted with a compact or remote ultrasonic sleeve sensor type. This sleeve sensor with customized flanges allows flow measurements of all conductive and non-conductive liquids on the basis of transit time.

CHARACTERISTICS

- ▶ Storage temperature: -20 to +80 °C
- ▶ Operating temperature: -5 to +60 °C
- ▶ Water speed: 0.1 m/s to 20 m/s
- ▶ Power supply: 28 Vdc
- ▶ Power: 10 W

DIMENSIONS

- ▶ Length: 200 mm
- ▶ Width: 200 mm
- ▶ Depth: 70 mm
- ▶ Weight: 2 kg

DVE (for submarines)

Flow measurement

Leakage detection system

The purpose of the DVE is to detect any escape in the sea water circuit penetrating in the submarine.

CHARACTERISTICS

DVE is an electromagnetic flowmeter. It is designed with three independent measurement channels. Flow speed is monitored by a high level secured calculator. Alarms outputs are available in case of leakage in the water circuit. The response time of the system is lower than 0.5 second.

DIMENSIONS

- ▶ Length: 575 mm
- ▶ Width: 400 mm
- ▶ Depth: 272 mm
- ▶ Weight: 42 kg



FLUXGATE

Compass

Electromagnetic compass

Designed for military applications, the BEN electromagnetic compass is tested to withstand severe conditions. It is designed with a sensor and a display console.



CHARACTERISTICS

Options

- ▶ Wheel mark IEC 60945 / ISO 11606 / IEC 61162

Main features

- ▶ Power supply : 115 Vac or 230 Vac / 60 Hz
- ▶ Eight hours built in battery

Sensor

- ▶ Fluxgate sensor with PCB data processing

Display

- ▶ LCD display backlighted for heading indication
- ▶ Bargraph for divergence between heading and target
- ▶ Display the true heading or the magnetic heading on selection
- ▶ Display heading 000 to 359°
- ▶ Ordered heading display 000 to 359°
- ▶ Setting of declination parameters for the true heading
- ▶ Heading information through RS422 (NMEA 0183, IEC 61162)
- ▶ Resolution: 1° on the display and 0.1 on NMEA output
- ▶ Accuracy: $\pm 1^\circ$ after compensation

Options

- ▶ Transmitting Magnetic Heading Device (TMHD) Static Compass

Performance Data

- ▶ Standards:
 - Wheelmark IEC 60945, IEC 61162-1, IEC 62288

DIMENSIONS

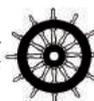
Cabinet

- ▶ Length: 144 mm
- ▶ Width: 144 mm
- ▶ Depth: 164 mm
- ▶ Weight: 2.2 kg

Sensor

- ▶ Diameter: 160 mm
- ▶ Length: 140 mm
- ▶ Weight: 4.5 kg

IMO Type approval - Wheelmark
by Bureau Veritas



C1150

Diver compass

Navigation board directional compass

C1150 is designed for both military and commercial applications : propelled submarine vehicle and diving boards...
C1150 works with luminescent salt. It needs to be enlightened during 2 to 3 minutes for 6 hours period of use.

CHARACTERISTICS

- ▶ Course indicator by turning alidade
- ▶ Compensatory bubble for expansion
- ▶ Fluorescent lubber line and graduations
- ▶ Depth-tested at: 6 bars
- ▶ Maximum inclination: $30^{\circ} \pm 2^{\circ}$
- ▶ Liquid: white spirit
- ▶ Operating water temperature: 2 to 45 °C

DIMENSIONS

- ▶ Total diameter: 120 mm \pm 2 mm
- ▶ Card diameter: 70 mm \pm 0.2 mm
- ▶ Weight: ~ 400 gr



CP70

Diver compass

Wrist directional compass

CP70 works with luminescent salt. It needs to be lighted during 2 to 3 minutes for 6 hours period of use.

CHARACTERISTICS

- ▶ Bracelet with buckle
- ▶ Dilation compensation bubble
- ▶ Card with fluorescent digits every 15°
- ▶ Fluorescent lubber line
- ▶ Card mounted on shock absorber
- ▶ Depth-tested at: 10 bars
- ▶ Maximum inclination: 25°
- ▶ Liquid: white spirit

DIMENSIONS

- ▶ Total diameter: 70 mm
- ▶ Card diameter: 56 mm
- ▶ Weight: 200 gr



About Atos & Bull

Atos SE (Societas Europaea) is a leader in digital services with pro forma annual revenue of circa € 12 billion and circa 100,000 employees in 72 countries. Serving a global client base, the Group provides Consulting & Systems Integration services, Managed Services & BPO, Cloud operations, Big Data & Cyber-security solutions, as well as transactional services through Worldline, the European leader in the payments and transactional services industry. With its deep technology expertise and industry knowledge, the Group works with clients across different business sectors: Defense, Financial Services, Health, Manufacturing, Media, Utilities, Public sector, Retail, Telecommunications, and Transportation.

Atos is focused on business technology that powers progress and helps organizations to create their firm of the future. The Group is the Worldwide Information Technology Partner for the Olympic & Paralympic Games and is listed on the Euronext Paris market. Atos operates under the brands Atos, Atos Consulting, Atos Worldgrid, Bull, Canopy, Unify and Worldline.

For more information
atos.net

Bull, the Atos technologies for the digital transformation

Bull is the Atos brand for its technology products and software, which are today distributed in over 50 countries worldwide. With a rich heritage of over 80 years of technological innovation, 2000 patents and a 700 strong R&D team supported by the Atos Scientific Community, it offers products and value-added software to assist clients in their digital transformation, specifically in the areas of Big Data and Cybersecurity.

Bull is the European leader in HPC and its products include bullx, the energy-efficient supercomputer; bullion, one of the most powerful x86 servers in the world developed to meet the challenges of Big Data; Evidian, the software security solutions for identity and access management; Trustway, the hardware security module and Hoox, the ultra-secure smartphone. Bull is part of Atos.

For more information
bull.com
benmarine.fr
benmarine@atos.net

Atos, the Atos logo, Atos Consulting, Atos Worldgrid, Bull, Canopy, Unify, Worldline registered trademarks of the Atos group. All trademarks are the property of their respective owners. Atos reserves the right to modify this document at any time without notice. Some offerings or parts of offerings described in this document may not be available locally. Please contact your local Atos office for information regarding the offerings available in your country. This document does not represent a contractual commitment. May 2016 © 2016 Atos



THIS BROCHURE IS PRINTED ON PAPER COMBINING 40% ECO-CERTIFIED
FIBERS FROM SUSTAINABLE FORESTS MANAGEMENT AND 60% RECYCLED
FIBERS IN LINE WITH CURRENT ENVIRONMENT STANDARDS (ISO 14001).