Digiway®
Road traffic recording

DIGIWAY,
IT COUNTS FOR YOU
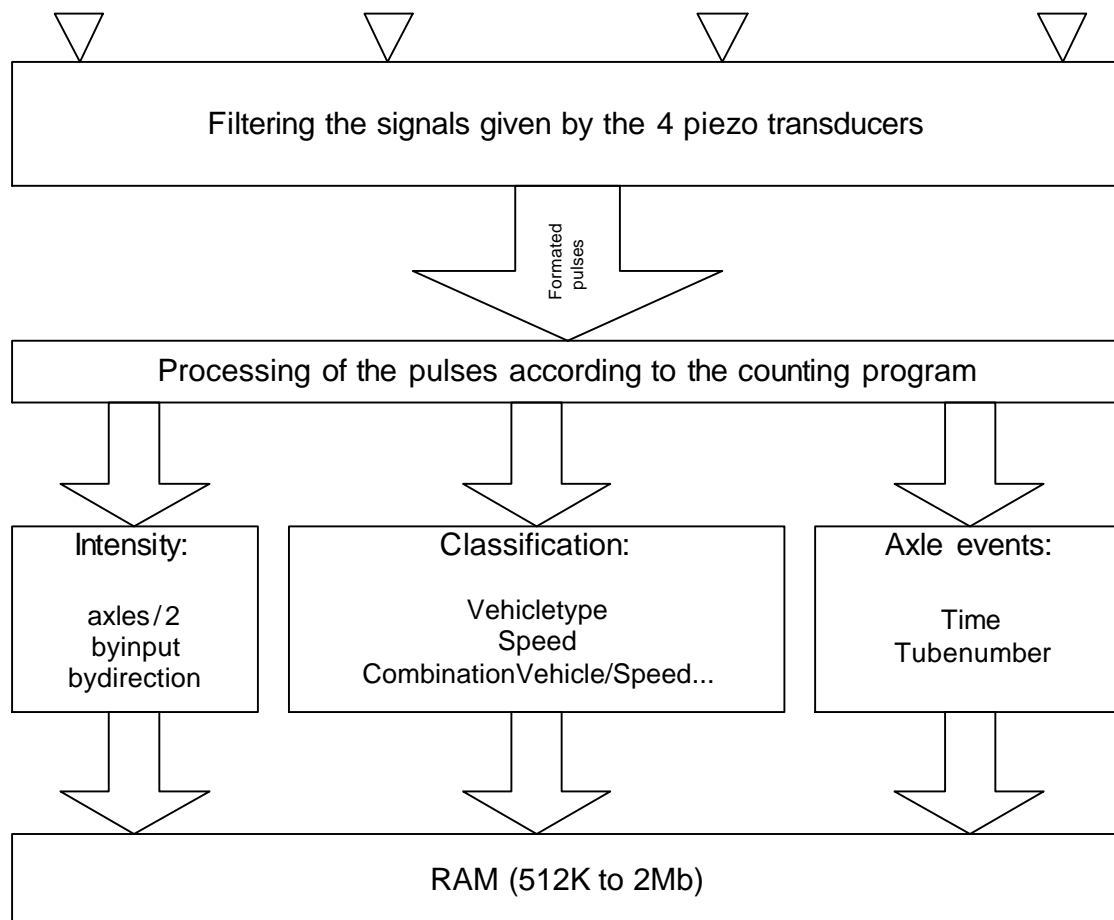
digiconcept
conception de systèmes digitaux

It was its cylindrical shape that gave the name **digipipe** to the first **Digiway®** counter, developed in 1984 by Digiconcept.

Built on the same model as its predecessor, the *Twoway* gave a finer analysis of the traffic: it was then possible, whenever there is enough distance between the vehicles, to classify these into different categories from the impulses delivered by two parallel tubes. With the classification based on two tubes the speed of the vehicle and its type where determined before proceeding to the classification itself.

The successor of the *Twoway II* counter, the **Fourway** or **Twoway IV**, comes now with new technology and is equipped with four road tube inputs.

The following diagram displays the working principles of the *Fourway* counter.

```
   ▽              ▽              ▽              ▽
┌────────────────────────────────────────────────────┐
│      Filtering the signals given by the 4 piezo transducers      │
└────────────────────────────────────────────────────┘
                    │ Formated
                    │ pulses
                    ▼
┌────────────────────────────────────────────────────┐
│   Processing of the pulses according to the counting program   │
└────────────────────────────────────────────────────┘
        │                   │                   │
        ▼                   ▼                   ▼
┌──────────────┐  ┌────────────────────┐  ┌──────────────┐
│ Intensity:   │  │ Classification:    │  │ Axle events: │
│              │  │                    │  │              │
│ axles / 2    │  │ Vehicletype        │  │ Time         │
│ byinput      │  │ Speed              │  │ Tubenumber   │
│ bydirection  │  │ CombinationVehicle/Speed... │  │          │
└──────────────┘  └────────────────────┘  └──────────────┘
        │                   │                   │
        ▼                   ▼                   ▼
┌────────────────────────────────────────────────────┐
│                 RAM (512K to 2Mb)                  │
└────────────────────────────────────────────────────┘
```

(1) The classification process is dependent on classification parameters; the vehicle's speed is first measured (from the period of time between the first pulse of the first axle over the 1st tube and the first pulse of the same axle over the second, and the distance between the two tubes); after that the vehicle's type is determined according to the axle distribution. Fifteen types may be recognized: see pictures on the following page.

(2) With the registering of the axle events, with a precision in time better than 1 ms, it is possible to extract traffic information (speed, classes, V50 of V85...) afterwards with the aid of a software that process all data, without the need to specify in advance, in a counting program, the kind of results that are expected. With a RAM of 2Mb, the *Fourway* counter can register more than 1.000.000 events. This also permits the developpng of new algoritms.
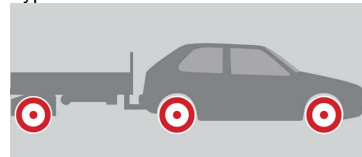
Type 0:

Type 1:

Type 2

Type 3:

Type 4:

Type 5:

Type 6:

Type 7:

Type 8:

Type 9:

Type 10:

Type 11:

Type 12:

Type 13:

Type 14:

The *Fourway* counter may be programed to execute the following types of recordings.

Intensity

Type	Function
0	Intensity over tube 1
1	Intensity over tube 2
2	Intensity over tube 1 and tube 2 independently
5	Intensity over tube 1 and (tube 2 – tube 1)
9	Intensity per direction (up and down)

Classification

Type	Function
6	Classification per vehicle's class (2) and length (4) in one direction
26	Classification per vehicle's class (2) and length (4) in two directions
7	Classification w/ one vehicle's class and 8 length classes one direction
27	Classification w/ one vehicle's class and 8 length classes two directions
10	Classification per axle's speed (8 classes) one direction
24	Classification per axle's speed (8 classes) two directions
11	Classification per vehicle's class (6) one direction
19	Classification per vehicle's class (6) two directions
12	Classification per vehicle's class (4) and length (2) in one direction
20	Classification per vehicle's class (4) and length (2) in two directions
13	Classification per vehicle's class (4) and speed (2) in one direction
21	Classification per vehicle's class (4) and speed (2) in two directions
14	Detailed report (time, type, speed, direction)
15	15 classes = 15 vehicle's types in one direction
28	15 classes = 15 vehicle's types in two directions
16	Classification per vehicle's class (2) en speed (4) in one direction
22	Classification per vehicle's class (2) en speed (4) in two directions
17	Classification w/ one vehicle's class and 8 speed classes one direction
23	Classification w/ one vehicle's class and 8 speed classes two directions
18	Classification per time of headway in one direction
25	Classification per vehicle's class (3) en speed (5) in one direction
29	Classification per vehicle's class (3) en speed (5) in two directions

Axle events

Type	Function
30	Time info (precision: better than 250µs between two axle events) and tube number. Capacity: 250.000 axle event per 512K

Fourway Technical specifications

Working temperature
-25 tot +70°C
Protection degree
IP65
Power source
6 LR14 standard cells
Serial link
1200 tot 115200 Baud
Operation time
(with MN1400 cells: 7500 mAh)
> 1,5 jaar
Weight (cells included)
1,4 kilos
External dimensions
100x120x270mm

Winway is a Windows software. with as well as programming possibilities, control & retrieving data offered by Retriever II, it allows to manage the counter results (printing, saving, retrieving, the creation of file worksheets for Excel or other spreadsheets). The link with the counter is done via a serial port of the PC.

Mobway is a Pocket PC software that changes a PDA into a control unit applicable to all **_Digiway_** counters. With this control unit, it becomes even more easy to program, verify and read the counters in the field.

Digiway®*, road traffic recording is a product developed and produced by*

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