

time for outdoor



(time for winners)

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Quality technology from Germany

NIS clocks are known for their high quality and reliability, born of our long experience and constructive partnership with our customers/users, and the use of high-quality materials for industrial applications.

Building services engineering: hospitals, schools, administrative buildings, banks, insurance firms

Public transport: railway stations, airports, bus stations

Absolute time: TV and radio studios

NIS clocks are available for the following operating modes:

- Quality products you can rely on
- Customised product development and manufacture
- Individual consulting & planning
- From planning to implementation
- Product and software training
- From service to re

NIS clocks are available for the following operating modes:

Autonomous clocks/standalone clocks

Quartz clock: Autonomous clocks which require setting at start-up, without automatic summer/winter time adjustment.

Radio clock: Autonomous, accurate clocks which are synchronised via the German time signal transmitter DCF77 within an approx. 1500 km radius of Frankfurt/M., fully automatic clock detection (in analogue clocks) and summer/winter time adjustment.

WARNING ! Radio reception may be limited in buildings due to structural reasons, and should be checked prior to the purchase and use of autonomous radio clocks. Based on our long experience, we therefore always recommend the use of a highly stable master and slave clock system such as NIS-TELNU.

System clocks with master clock

Pulse slave clock: a system clock which is controlled via a master clock with 12/24V alternating-polarity minute pulses. All slave clocks must be connected with the correct polarity. Clocks with date displays must be set manually at start-up or after correcting a fault. As a rule, analogue clocks with a second hand require an additional 2-core conductor with a second impulse from the master clock or with an integrated synchronised second mechanism

NIS-TELNU clock: The intelligent slave clock direct from the inventor of the TELNU system, which is controlled via a TELNU master clock with serial time telegram (seconds, minutes, hours, date, month, weekday and year) without additional conductors (operating voltage and data transmission via two-core conductor). All analogue clocks (including those with date display and/or second hand) can be operated with this system. Fully automatic hand adjustment via electronic clock hand detector with summer/winter time adjustment.

The clock system is automatically set at start-up and after correction of faults such as cable breaks or short-circuits. It is not only the unique cost saving at start-up that "counts": the ongoing reliable technology also provides security and cuts operating costs.

At a glance: Analogue outdoor clocks

Analogue clocks for outdoor use, in single, double or multi-sided versions, available complete with case or without case in kit form.

All NIS analogue outdoor clocks consist of high-quality materials (flat slave clock and radio clock mechanisms with tried-and-tested brass cogwheels and stainless steel shafts, no synthetic materials). Operating temperature range from -30 to $+80^{\circ}\text{C}$.



(OPTION)

- Special painted version for Housing
- Upgradable to hour/minute/second display
- GPS-satellite time receiver for world-wide use

Modes of operation:

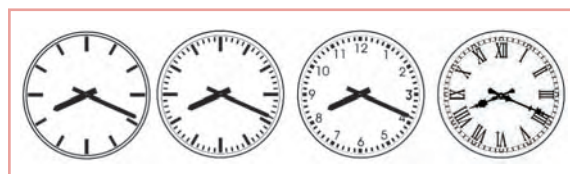
- Classical slave clocks 12V/24V/48V/60V for alternating-polarity minute pulse
- Intelligent time telegram-controlled TELNU system clocks
- DCF77 radio or GPS clocks, mains operation with summer/winter time adjustment

Some applications of analogue outdoor clocks:



Industrial clocks with timeless designs

- Round clocks with 40/50/60/80cm dial diameter and square clocks with 40/50/60/80/100cm case and round 40/50cm clocks shockproof PC plastic, grey base (equivalent to RAL 7004)
- Case for round 60/80cm clocks, powder-coated aluminium, white (equivalent to RAL 9010)
- Case for square clocks aluminium, anodised silver finish
- Single-sided clocks for wall mounting, double-sided clocks with either wall or ceiling bracket, or for pole mounting
- Aluminium baton pair (hours and minutes) with black painted finish
- Backlit Plexiglass clock dial, choice of 4 different dials to DIN 41 091
 - ◆ Hour markers
 - ◆ DIN
 - ◆ Arabic numerals
 - ◆ Roman numerals



		Dial diameter		A	B	C	D
				single-sided	double-sided		
		in mm					
		40/50cm Ø	60/80cm Ø	450	123	230	151
		500	550	135	254	151	
		600	650	150	240	115	
		800	850	150	266	125	

		Dial diameter		A	B	C	C1	D
				single-sided	double-sided			
		in mm						
		400	450	165	223	270	80	
		500	550	165	223	270	80	
		600	650	165	223	270	80	
		800	880	165	223	270	80	
		1000	1100	165	223	270	80	

Analogue outdoor advertising clocks

A perfect combination of time system & advertising

- Rectangular sectional aluminium case, silver anodised finish with Plexiglass window.
- Single or double-sided version available, dimensions WxHxD: 650x1000x165 (single-sided)/223 (double-sided) mm analogue clock oval 60cm dial diameter with hour markers, backlit
- Hour and minute display
- Radio clock, mains operation with automatic summer/winter time adjustment
- Advertising area approx. WxH: 600 x 335mm, backlit
- Digital temperature display with 100mm high numbers in 7-segment LCD system



- Square sectional aluminium "Softline" case, white powder-coated with Plexiglass window
- Double-sided version only
- Dimensions WxHxD: 650x650x200mm
- Analogue clock oval 60cm dial diameter, with hour markers, backlit
- Hour and minute display
- Radio clock, mains operation with automatic summer/winter time adjustment
- Advertising area approx. WxH: 576x190mm, backlit

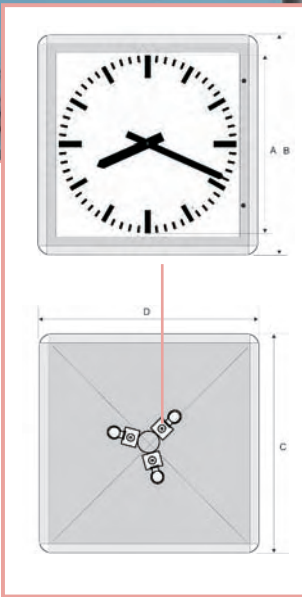
Advertising texts on request

Cuboid clocks, 4-sided clocks



- Cuboid clocks, 50/60/80/100cm dial diameter
- Case in all-round, rounded sectional aluminium, silver anodised finish with spherical corner joints
- Four-sided maintenance doors, encased in toughened safety glass.
- Aluminium baton pair (hours and minutes) with black painted finish
- Plexiglass clock dial, backlit, choice of 4 dial styles to DIN 41 091

- ◆ Hour markers
- ◆ DIN
- ◆ Arabic numerals
- ◆ Roman numerals



Dial diameter	A	B	C	D
in mm				
500	500	680	680	680
600	600	780	780	780
800	800	980	980	980
1000	1000	1180	1180	1180

DCF filter time receiver

Turnable intelligent DCF77 filter time receiver with 'all around reception'

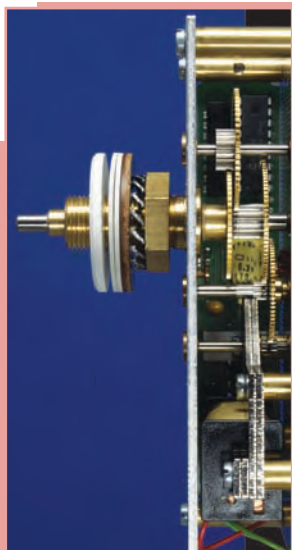


Features:

- Reception quality and status display with red and green LEDs
- internal quartz timer for constant time code transmitting
- selected interference filter
- robust and weather resist plastic case consisting of polycarbonate
- low energy consumption, also for battery operated clocks suitable.

Kit components for analogue outdoor clocks

Quality and reliability



Long-term solution for outdoor use with brass cogwheels and stainless steel shafts

Slave clocks: (one master clock required)

Slave clock ANU80

- for 12/24/48/60V
- up to 80cm dial diameter

Synchronised second mechanism ANU80-SS

- with external power supply unit 230/12V (IP65)

Slave clock ANU150

- for 12/24/48/60V
- up to 150cm dial diameter

Radio clocks:

Radio mechanism BQW

- with interface unit (power supply unit and DCF77 radio receiver)
- up to 100cm dial diameter

Radio synchronised second mechanism BQW-SS

- with external power supply unit 230/12V (IP65)

(OPTION)

GPS satellite time receiver for world-wide use, TELNU clock operation via TELNU master clock

Start-up unit for radio mechanism BQA-01

- with DCF77 radio receiver
- mains operated 270 V up to 4 radio mechanisms

BQA-02

- with DCF77 radio receiver
- mains and battery operated (operation during power cuts, also connection to street lighting) up to 4 radio mechanisms

BQA-03

- with DCF77 radio receiver
- battery operated only, approx. 5 years service life, up to 2 radio mechanisms

Hands:

Aluminium baton or nostalgic clock hands in black to DIN 41092 for 30/40/50/60/80/100cm dial diameter

Aluminium, wedge-shaped second hand in red to DIN 41071 30/40/50/60/80cm dial diameter



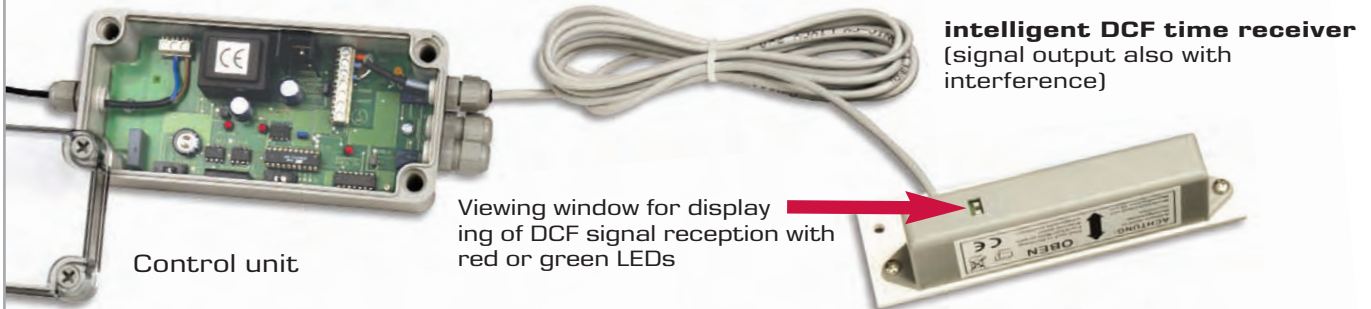
Radio mechanism with synchronised second mechanism



Clock mechanism with cap (for protection against condensation)

Radio-analogue-slave clock-controller FUNST-12

for pole changing minute pulse slave clocks



- radio controlled, fully automatic analogue clock controller
- up to ten 12V slave clock movement with minute pulse.
- controller in weather resist case protection grade IP65
- can be integrated in the case or replaced out of the case
- small unit only WxHxD 215x81x67 mm
- with replaceable small radio time receiver DCF-77 (IP68)
- ideal to exchange for existing analogue slave clocks
- fully automatic summer time changeover
- maintenance free without accumulator with follow-up automatic after power failure
- optional power reserve over 12V accumulator possible; fast loading e.g.with power supply over street lighting
- starting also without time receiver possible

Digital temperature display

Digital temperature display with two display systems

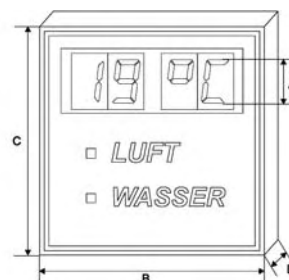
- Ideal for swimming pools
- Alternating air and water indicator
- Fixed digits white film, customisable text
- Suitable for outdoor and indoor use
- Weatherproof case in sectional aluminium, with silver anodised finish and Plexiglass window

LCD temperature display

- 7-segment displays in transfective LCD system
- Colour of character colour yellow, green, red, white or blue on black background
- Character heights 100 and 150mm



A	100mm	150mm
no. of indications	2	2
B	600	750
C	700	800
D	130	130



Radio-analogue-slave clock-controller FUNST-24

for pole changing minute pulse slave clocks



Steuergerät

Viewing window for displaying of DCF signal reception with red or green LEDs

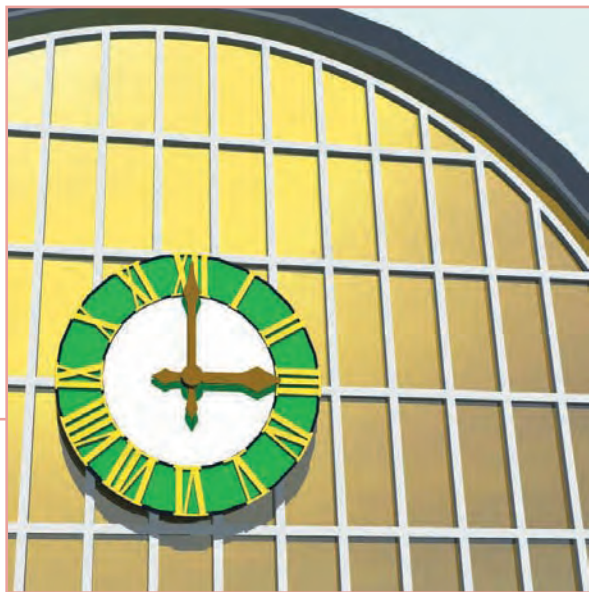
intelligent DCF time receiver
(signal output also with interference)

- radio controlled, fully automatic analogue clock controller.
- up to four 24/60V slave clock movement with minute pulse.
- controller in weather resist case protection grade IP65
- can be integrated in the case or replaced out of the case
- small unit only WxHxD 150x81x67 mm
- with replaceable small radio time receiver DCF-77 (IP68)
- ideal to exchange for existing analogue slave clocks
- fully automatic summer time changeover
- maintenance free without accumulagtor with follow-up automatic after power failure
- starting also without time receiver possible



Outdoor tower and facade clocks up to 6.0m diameter

Customise your own clock!

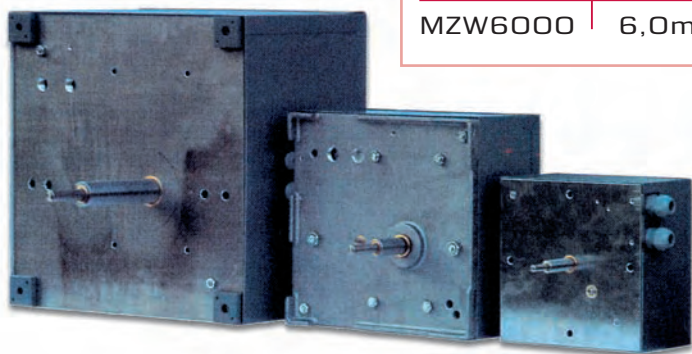


- Tower clocks with free-moving clock hands for dial diameters up to 6.0m
- Motor clock hand mechanism up to 1.5/2.5/4.0 and 6.0m
- Motor clock hand mechanisms in tried-and-tested quality (plastic-free metal construction material)
- Baton clock hands (hours and minutes) with black painted finish, statically and dynamically balanced

(OPTION)

- DCF radio clock / GPS satellite clock / 230V minute pulse
- Pulse amplifier for motor clock hand mechanisms, 230V output with 12-60 minute pulse Input
- Special paint finish possible for clock hands
- Other clock hand designs on request
- Illuminated clock hands on request

Typ	Dial-diameter to	Dimensions WxHxD in mm	Weight
MZW1300	1,5m	205x205x140	5kg
MZW2500	2,5m	290x275x175	12kg
MZW4000	4,0m	400x400x300	30kg
MZW6000	6,0m	420x420x360	35kg



At a glance: Digital time and temperature displays available in 3 versions

Time and temperature displays for outdoor use, single or multi-sided versions, supplied complete with or without case in kit form. Automatic time setting and summer/winter time adjustment via DCF77 time signal transmitter or GPS satellite time signal. DCF77 receiver and temperature sensor included. Case design: Sectional aluminium, silver anodised finish with Plexiglass window.

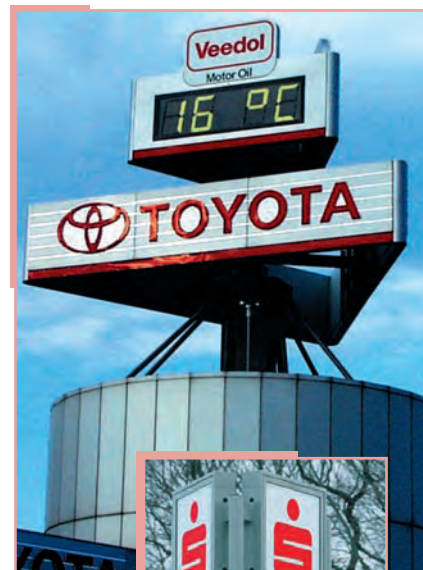
(OPTION)

GPS satellite time receiver for world-wide use, protective case for temperature sensor to prevent false readings due to direct sunlight

Digital time and temperature displays - for eye-catching outdoor advertising

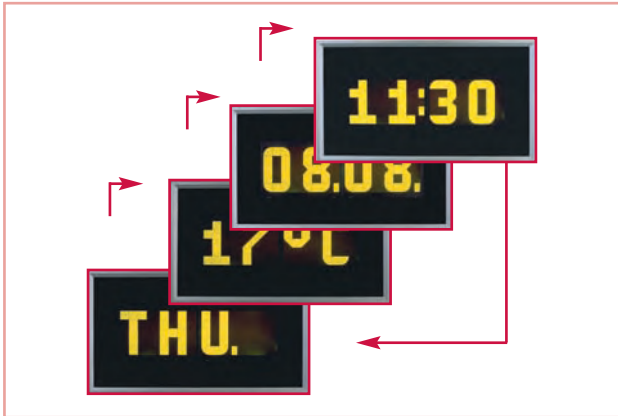
The displays are not only used in industrial applications but also combined with outdoor advertising. The continuous alternation of the display between time and temperature in outdoor advertising always attracts attention. The time and temperature information also ensures that advertising displays lose none of their appeal even after years.

Some applications of digital time and temperature displays:



LCD displays

- to display time, temperature, weekday and date alternately or separately

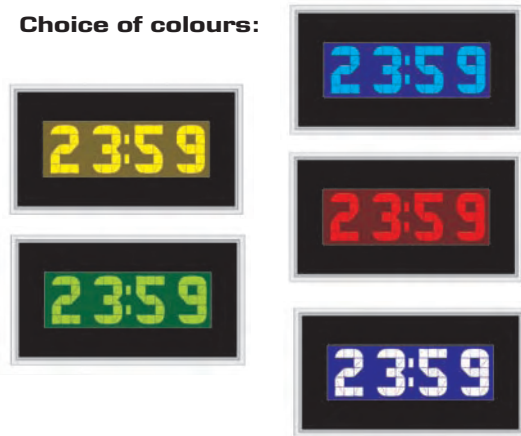


- Basic version 4 or 6-digit display, extendible with double digits
- Digit height 64, 100, 150 and 220mm
- Alphanumeric character set comprising 38 / 88 segments per character
- Characters in yellow, green, red, white or blue on black background
- Can be operated as 230V radio clock or TELNU system clock via TELNU master clock
- Temperature display in °C (Celsius) or °F (Fahrenheit)

Advantages of modern transfective LCD technology

- Excellent readability in sunlight via reflection and in darkness via backlighting
- Long lifetime up to approx. 200,000h (22 years)
- Operating temperature range -25°C to +85°C
- Angle of view over +/- 70°
- Extremely low energy consumption
- No noise
- No wearing parts

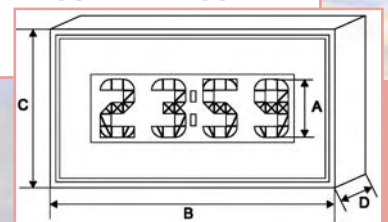
Choice of colours:



(OPTION)

Continuous texts can be integrated in the display sequence, character heights of 315, 630 or 1260mm also available with graphic dot matrix display

A	64mm	100mm	100mm	150mm	150mm	220mm	220mm
No. of characters	6	4	6	4	6	4	6
B	500	600	825	750	975	900	1275
C	300	350	350	415	415	500	500
D1 single-sided	130	130	130	130	130	130	130
D2 double-sided	190	190	190	190	190	190	190



7-segment-LCD / time and temperature display 'KIT'



Digit height: 250 mm
viewing from DIN
up to 120m

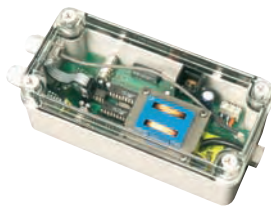


Digit height
150mm viewing
from DIN
up to 71m



Digit height 100mm
viewing from up to 48m

Control unit



DCF77-radio
time receiver with
reception indicator
red / green

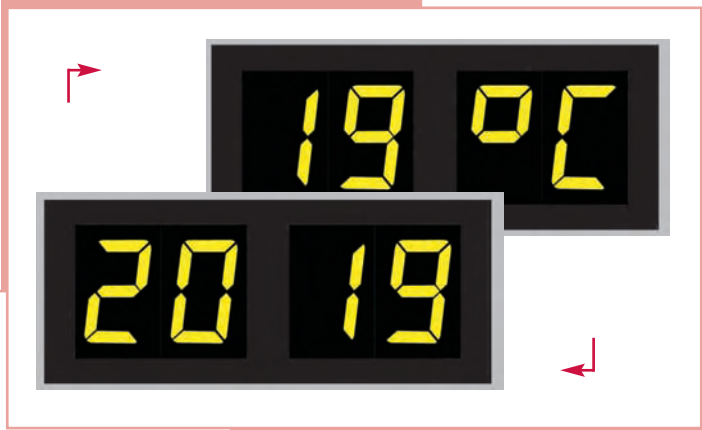
- Kits single- and double-sided, complete ready for connection incl. Control electronic and 230V power supply appliance.
- simple construction without frame, backlight and fan
- robust display for outdoor uses.
- Long service time, low energy consumption.
- Radio time receiver, replaceable (in the IP 65 case), intelligent time receiver with special filter and reception control indicator with red/green LEDs
- temperature sensor with 10m mains cable
- digit height 100, 150 und 250 mm
- digit color yellow, white, red, green or bleu on black background
- display for time, temperature and date, alternating speed can be set

'KIT' for indoor and outdoor uses

Model number	digit height in mm	number of digit	design	dimensions (WxHxD mm)
K-7LC4UT10/1KIT	100	4	single-sided, without backlight	435 x 225 x 90
K-7LC4UT10/2KIT	100	4	double-sided, without backlight	435 x 225 x 110
K-7LC4UT15/1KIT	150	4	single-sided, without backlight	623 x 273 x 90
K-7LC4UT15/2KIT	150	4	double-sided, Hinterleuchtung	623 x 273 x 110
K-7LC4UT25/1KIT	250	4	single-sided, without backlight	744 x 373 x 90
K-7LC4UT25/2KIT	250	4	double-sided, without backlight	744 x 373 x 110

Do it yourself

7-segment bistable numeric displays

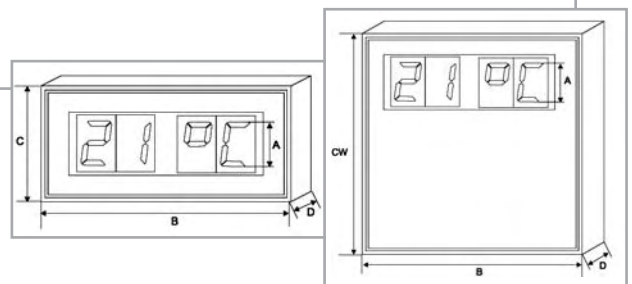


- Display of time, temperature and date in alternating sequence or separately
- Basic version two moving digits and plus/minus sign, °C in fixed text
- Character heights 100, 150, 250, 300, 450, 600 and 1000mm
- Numeric character set with 7 segments per character
- Characters in yellow or white on black background
- Can be operated as 230V radio clock, quartz clock, 12/24V slave clock or TELNU clock via TELNU master clock

- Temperature display possible in °C (Celsius) or °F (Fahrenheit)
- Excellent readability in sunlight via reflection
- Operating temperature range -25°C to +65°C
- Angle of view over +/- 70°
- Extremely low energy consumption



A	100mm	150mm	250mm	300mm	450mm	600mm	1000mm
No. of characters	4	4	4	4	4	4	4
B	650	900	1250	1500	2100	3000	5500
C	300	415	575	640	800	1000	1500
D1 single-sided	130	130	130	130	190	190	360
D2 double-sided	190	190	190	190			
CW (advertising space)	650	900	1250	1500			



Digital temperature display with analogue time display

Analogue clock kit with special BQW radio clock mechanism. Interface unit BQA-02 with high-quality DCF77 radio receiver with special filter, 230V power supply unit and lithium battery (see page 8)

time for winners

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