

A GPS DEVICE FOR
A WIDE RANGE
OF MONITORING USES



TICK

GPS tracker with long battery life



NAM
SYSTEM®
MONITORING TECHNOLOGY



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MONITOR ANYTHING, ANYTIME AND FROM ANYWHERE

TICK is a portable GPS tracker, that can be used virtually anywhere that comes to mind. Whether it is cars, children, bags, expensive items, containers, train wagons, lorries, monitoring participants of extreme sports or organizing people in the field, you will find a usage for TICK. Thanks to its magnetized fixing and small dimensions, it can be placed almost anywhere. It is unbelievably simple for you to set up monitoring with the aid of the mobile application, whenever it is necessary and wherever you are online.

KEEP AN OVERVIEW OF ASSETS AND PEOPLE WHO MATTER TO YOU



**TICK FOR POLICE,
SECURITY AGENCIES,
DETECTIVE SERVICES**



**TICK FOR MONITORING
LEISURE ACTIVITIES**



**TICK FOR MONITORING
VEHICLES OR ITEMS THAT
COULD BE STOLEN**



**TICK FOR ORGANIZATION
AND ONLINE MONITORING
OF RACES**



**TICK FOR CAR RENTALS,
MACHINE HIRE AND MONI-
TORING MOVEMENT INSIDE
GROUNDS**



**TICK FOR MONITORING
PARCELS, DELIVERIES,
CONTAINERS AND THE
TRANSPORT OF VALUABLE
ITEMS**



**TICK FOR MONITORING THE
MOVEMENT OF CHILDREN,
SENIORS OR WORKERS IN
THE FIELD**

GPS DEVICE - MAIN ADVANTAGES



**Many various methods of use – the device
is portable**



**Simple operation through the mobile
application**



No need to install



Battery life of up to 1 year after charging



**Excellent GPS sensitivity for determining po-
sition (even when the tracker is placed on the
vehicle underside)**



**The device already contains a SIM card and
so works straight out of the box – no need to
buy anything extra**



**Automatic position sending
Do not pay for needless SMS**



**Waterproof
Also works under water**

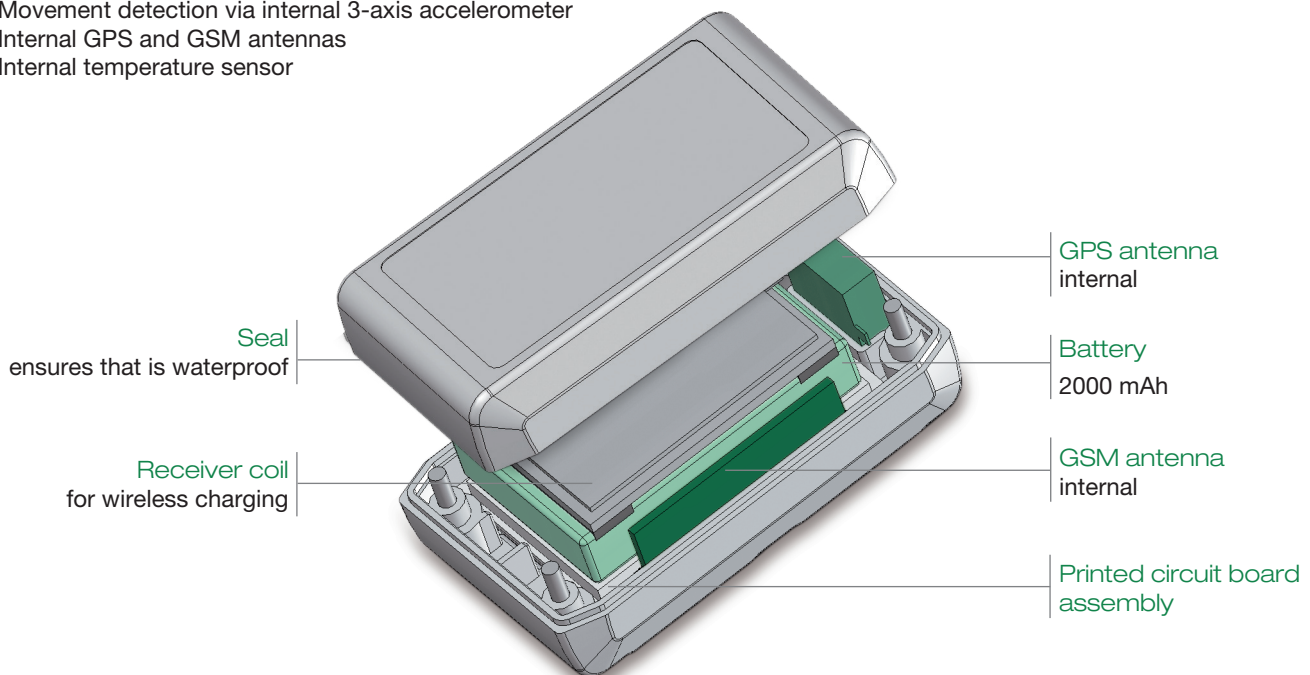


**Wireless recharging
No damage to connectors**

A SOPHISTICATED AND RELIABLE GPS TRACKER

It is possible for the user to set one of seven operational modes from the mobile application and thanks to this it is possible to extend the device's battery life (per charging)

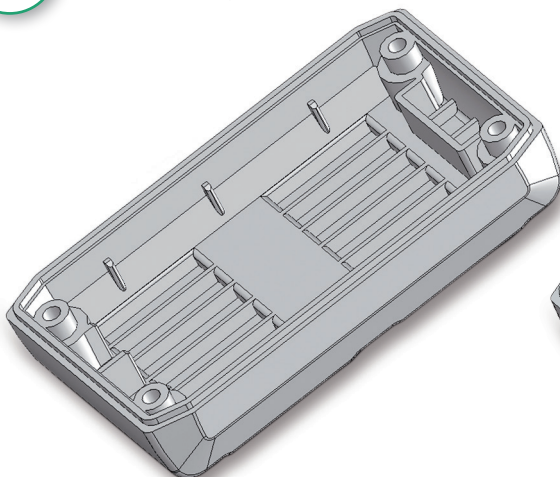
- You can completely switch the GPS device off remotely
- Periods during which positions are sent: 5 sec, 10 sec, 30 min, 60 min, 2 hours, 12 hours, 24 hours or when requested
- Rugged case, waterproof, soldered ChipSIM card
- Detects when removed from conductive surface
- No buttons, no connectors, no LED lights
- Powered by Li-ion battery, operates for up to 1 year if reporting locations once daily
- Wireless charging
- Movement detection via internal 3-axis accelerometer
- Internal GPS and GSM antennas
- Internal temperature sensor



2 device versions:

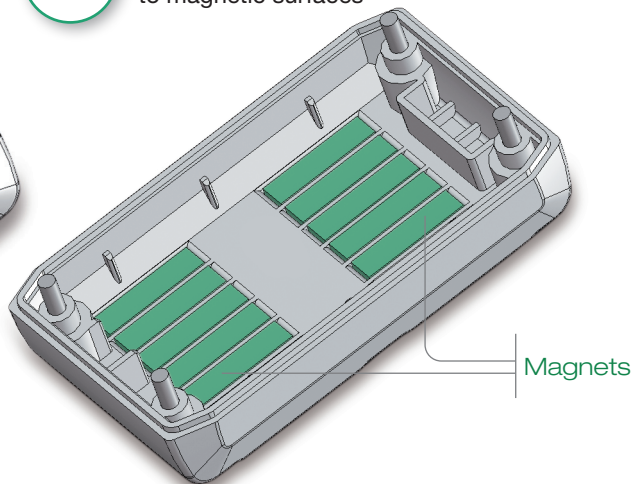
1

Without magnets – for putting into items, bags and pockets



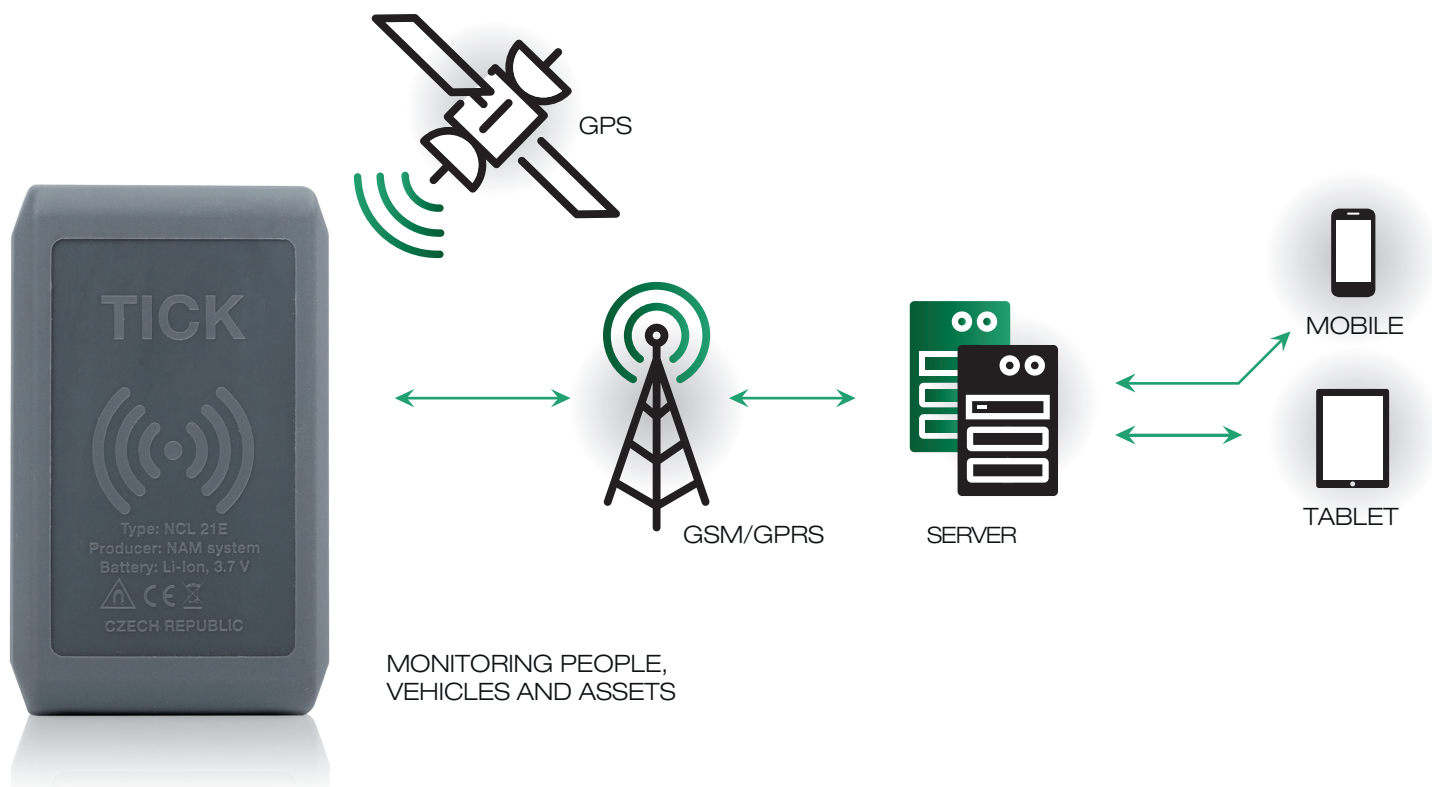
2

With magnets – for fixing to magnetic surfaces



Magnets must be kept at a safe distance from: heart pacemakers, hearing aids, recording media sensitive to magnetic poles (mechanical HDD), mechanical watches, displays, payment cards and other cards with magnetic strips and sensitive electronics otherwise these items could be damaged.

SECURE COMMUNICATION WITHOUT UNNECESSARY SMS MESSAGES



TECHNICAL PARAMETERS – TICK

GSM communication bandwidths	850 / 900 / 1800 / 1900 MHz, 2G, GPRS
Output performance	2 W @ 850 / 900 MHz, 1 W @ 1800 / 1900 MHz
GPS position accuracy	< 2.5 m CEP
Antennas	Internal
Dimensions	86 × 51 × 30 mm
Weight (including battery)	139 g (without magnets), 165 g (with magnets)
Battery (internal)	Li-Ion, 3.7 V, 2000 mAh
Ingress protection	IP67
Wireless charging	Qi standard, max. 5 W, WPC1.1
Range – operating temperatures	–20 °C to +55 °C
Range – temperatures for charging batteries	0 °C to +55 °C
Transmission protocols	UDP, SMS
Sending of data	According to mode of tracker
Low power alert	Critical internal battery power level alarm (5 %)
Seize detection *	Detection (via magnets) of removal of device
Motion detection	On the basis of internal 3-axis accelerometer

* Seize detection only applies to devices fixed by magnets.



TICK for police, security agencies, detective services

TICK is an ideal device for all types of Law enforcement and emergency services organizations that need to react quickly to developing situations.

Within an investigation it is important to collect as much evidence as possible. A wide range of criminal activities are carried out in new and more refined ways. Because of this it is important to use modern methods to gather evidence. TICK is an excellent tool to have at any phase of an investigation – if you need to know the movements or current location of a monitored item, suspect, witness, covert source or even your own employees out in the field.

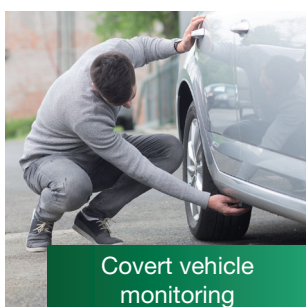
POSSIBLE USAGES FOR POLICE:

- Special departments (departments for fighting organized crime, anti-terrorism)
- Decoy operations, trap or bait cars/items – to uncover crime and prevent theft
- Searching for evidence to prove criminal acts
- Monitoring and protecting VIPs and witnesses
- Coordinating police departments to secure public order
- Operational planning for common/exceptional events
- Organizing training for police and other emergency services
- Monitoring and evaluating police rounds/patrols
- Administration of vehicle fleet

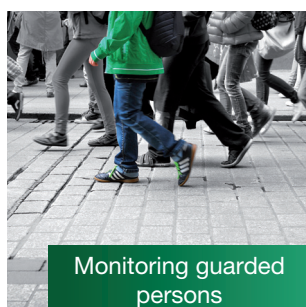
OTHER RECOMMENDATIONS:

- Monitoring of vehicles, items and people in monitored areas (high security zones, etc.)
- Organizing people in the field
- Planning assistance during open searches for evidence and stolen items

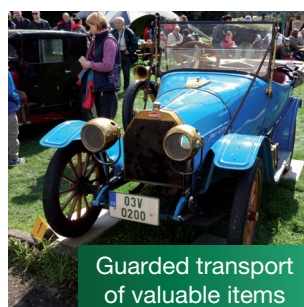
**SECURING
EVIDENCE FOR
INVESTIGATIONS**



Covert vehicle
monitoring



Monitoring guarded
persons



Guarded transport
of valuable items



Organization
of people in the field



TICK for car rentals, machinery hire and monitoring movement in company grounds

TICK is a suitable instrument for monitoring hired assets and vehicles or vehicles moving in a guarded area e.g. in a high security zone, where thefts often occur or where it is necessary to monitor movements. Do you loan out vehicles? Do your employees use private vehicles for company purposes? Do you lend vehicles to customers (car repair service where clients receive a replacement vehicle in case of accident, hotels and car rental companies for transfer from hotel to airport, etc.)? In every case TICK assists in giving data for the administration of fleets without the necessity to install a hard-wired GPS unit onto the vehicle. Costs for fitting/removal of hard-wired devices are saved. GPS trackers can be repeatedly used on various vehicles and for various usages.

ADVANTAGES OF USAGE:

- You know what monitored assets/vehicles are doing (in real time)
- You can display the history of recorded events
- You can optimize vehicle movement in defined or guarded areas
- You can monitor goods deliveries and attain estimated arrival times to the destination
- You can gain evidence of unauthorized vehicle usage
- In cases of theft, you know where the monitored asset is
- Thanks to time and distance travelled data, you have got the basis for invoicing occasional use of private cars for company purposes
- The device is portable. It can be used on various vehicles
- Installation is fast and very simple, data is displayed on the mobile application wherever you are

**USE ONE
DEVICE FOR
VARIOUS
VEHICLES AND
PURPOSES**



Rented cars



Monitoring vehicle movement in defined areas



Using private cars for company purposes



Rented machinery



TICK for monitoring vehicles or items that could be stolen

Have you parked your car and left? And are you sure that you will find it in the same place when you return? Do you use expensive machinery on a building site and are worried about theft? Do you send high value goods and do not want these to get lost? Items are frequently stolen and if a thief decides to steal something, nothing will stop him. How can TICK help? Simply fix it (by its magnets) to a conductive surface on the vehicle, or put it into/onto the item that you need to monitor. On the mobile application you can choose to set which event immediate notification should be sent. If a monitored event occurs you can deal with it immediately. You can see where the monitored asset currently is and inform the police about this.

ADVANTAGES OF USAGE:

- Fast device installation by just fixing to a magnetic surface on the vehicle or placing onto/into the monitored item
- Possible to fix in a concealed place, where nobody will search for it (e.g. under car)
- Possible to automatically and immediately display movements, positions and routes taken on the mobile application. Get details needed to make search or inform police
- Long device battery life – thanks to the option to choose between 7 operating modes, battery energy can be saved and the device does not need regular charging when you are travelling

**HELP DURING
THEFT OF
A VEHICLE
OR ITEM**

Monitoring moving objects and items



Theft of boats, water scooters



Theft of horse boxes



Trailer, caravan theft



Theft of machinery



Car theft



Monitoring luggage

and others...



TICK for organization and online monitoring of races

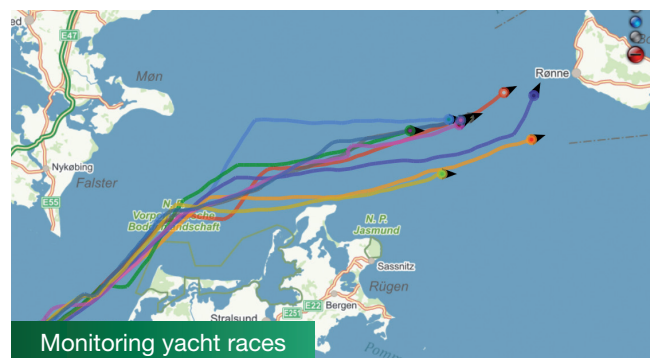
Do you organize races and do you need to coordinate individual people and vehicles in the field? Do you want visitors to the event to know where race competitors currently are? Do you need to control that competitors observe event regulations? Give them a TICK GPS tracker. On the web and mobile applications you simply display where individual competitors and event organization teams are situated and check routes taken, speeds travelled, etc.

POSSIBLE USAGES:

- Eco rallies – control routes taken and compliance with speed limits on the route
- Rally Intercontinental – searching for stranded vehicles
- Navigating service cars to broken-down cars
- Yacht races – detecting start up of motors, controlling circumnavigation of islands or buoys, controlling routes taken
- Dog sled races – navigating rescuers to sleds with injured dogs, display of sled movements to supporters so that they can support them along the route
- Rallies – organizing pre-race reconnaissance and going through the stage routes before the official start of the rally
- Increasing race popularity – displaying current competitor movement online to supporters via the web platform
- Coordination of organizers, rescue services and other elements at major events

**CONTROL
THAT RULES
AND
SAFETY ARE
OBSERVED**

Verified solutions for
observing rules and for
race organizing



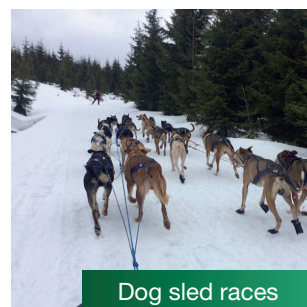
Rallies



Bike races



Yacht races



Dog sled races



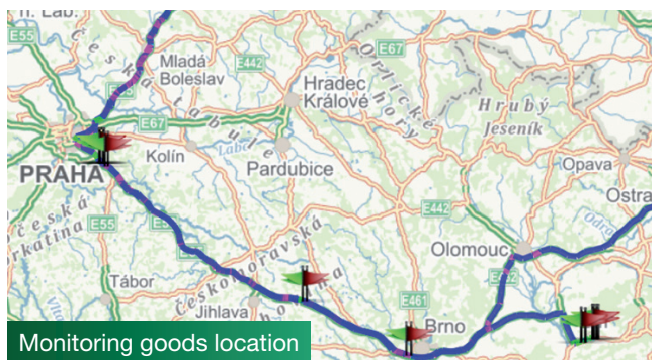
TICK for monitoring parcels, deliveries, containers and for organizing transport

Do you send important deliveries or transport containers? Do you need to know where goods currently are and the estimated arrival time at their destination? TICK will help you answer these questions. Get accurate details about where a parcel currently is. Do you transport valuable deliveries marked as fragile but have experience that your employees do not handle parcels carefully? TICK will help you find out how goods were handled during transport and when loaded/unloaded. Thanks to measuring impacts made on parcels, is it possible to find evidence if parcels have been badly handled in the sorting room.

POSSIBLE USAGES:

- Monitoring movements of deliveries, containers and valuable items
- Collection of data showing inefficiencies during transport – controlling of parcel transport and loading/unloading places and revealing needless manipulation/movements in the sorting room that lead to longer delivery times
- Attaining proof of bad handling of fragile/valuable goods
- Searching for missing deliveries
- Enabling the client to monitor goods during transport

**REST ASSURED
BECAUSE YOU
KNOW
WHERE YOUR
PARCELS
ARE**

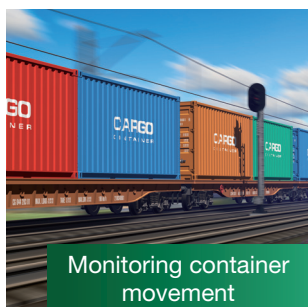


Monitoring goods location

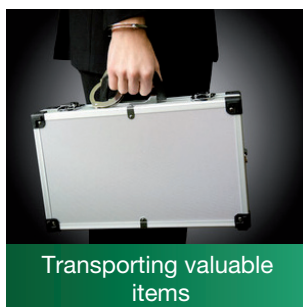
A reliable solution for improving the organization of transporting goods



Monitoring parcels



Monitoring container movement



Transporting valuable items



Controlling unsuitable handling of goods



TICK for monitoring the movement of children, seniors or workers in the field

Family and loved ones are one of the most valuable things that we have in our lives. And sometimes you need to know where they currently are and if they are safe but without constantly phoning them (e.g. if on school field trips, travelling home from school, when seniors are outdoors, during holidays or travelling). Just put the GPS tracker into a school bag or pocket for example. TICK can display the current location and movements of the person being monitored. Your children have not arrived home on time? Look at the mobile application to see where they are. TICK is also an excellent tool for monitoring the movements of employees in the field (municipal workers, guards, postal workers, etc.) and checking that they complete their assigned work responsibilities.

ADVANTAGES OF USAGE:

- Overview of movements of loved ones
- Monitoring VIPs, witnesses and guarded persons (crime investigations)
- Evaluating patrols and work of people in the field
- Quickly finding the place where work is being done (displayed on map in mobile application) and option to display where work was done during the day or in the past

**FEEL ASSURED
OF PEOPLE YOU
CARE ABOUT**

A reliable solution for monitoring work in the field and for worker security:



Monitoring patrol routes of guards



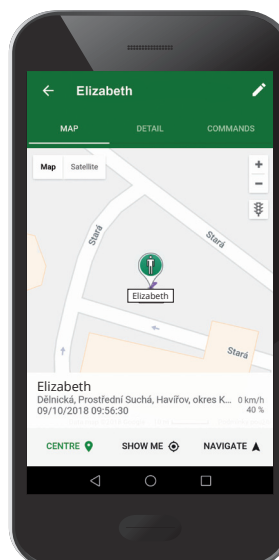
Monitoring the work of municipal workers



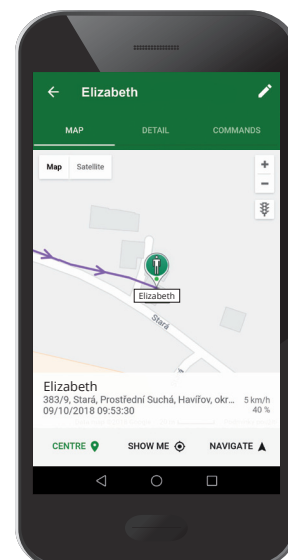
Monitoring VIPs and witnesses



Monitoring children and seniors



Display of location of monitored person



Display of current or previous movements of the monitored person



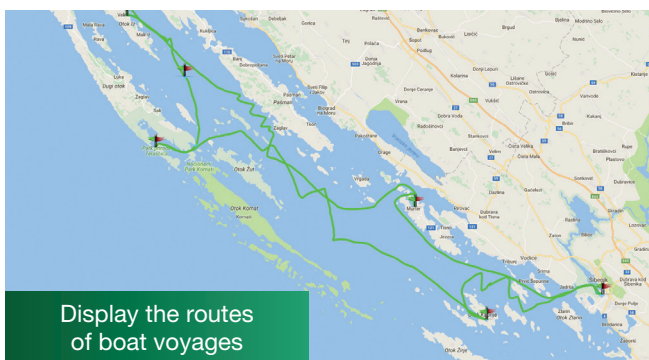
TICK for monitoring leisure activities

Do you enjoy extreme sports or regularly going out into the countryside? Put your rucksack on your back, go cross-country skiing and enjoy an adrenalin filled experience. Has an avalanche fallen in your vicinity? Your loved ones will know where you currently are and whether you are moving in an unsafe area. Do you want as many people as possible to know about your journey? Supporters can follow you online on the web and mobile application. Use TICK to record routes, for automatic reporting of movement or for measuring distances covered. Are you currently in the mountains with no access to electricity? No problem – TICK will function for a number of days without the need to be recharged.

POSSIBLE USAGES:

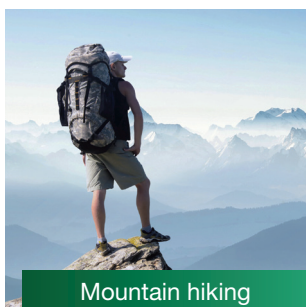
- Skiing
- Water-sports, canoeing, kayaking, rafting, yachting – the device is waterproof
- Mountain hiking
- Cycling, mountain biking
- Motorcycle riding
- Monitoring valuable equipment, etc.

**YOU CAN RELY
ON THE
DEVICE EVEN IN
THE WILD
WITHOUT
ACCESS TO
ELECTRICITY**



Display the routes
of boat voyages

Do you know where your
loved ones are?
Display their movements
and routes.



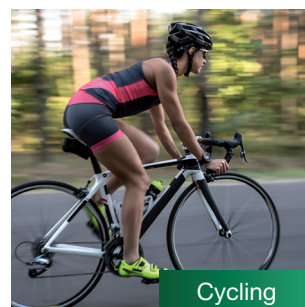
Mountain hiking



Yachting



Motorcycle riding



Cycling

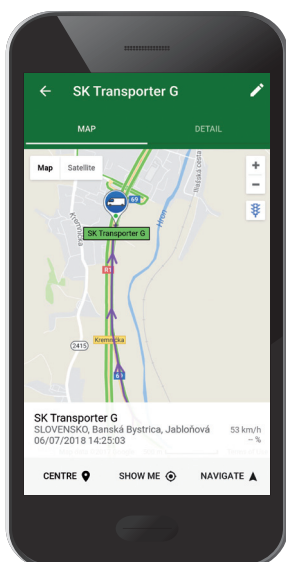
A GPS TRACKER THAT IS SIMPLE TO SET UP, USE AND CONTROL

Thanks to the sophisticated and user-friendly application for mobiles, TICK is an excellent instrument for GPS monitoring. If you are in the field, the online application instantly displays all the key features of the tracker: overview of its settings, history of movements, navigation to its last known position, setting of quick commands and other data. Do you only occasionally need locations sending? Choose one of 7 operational modes and extend the battery life (of the device) to up to 1 year.

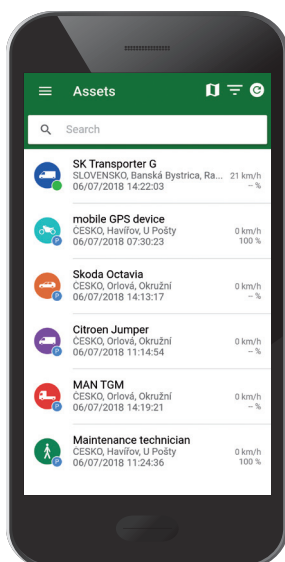


Smart phone application

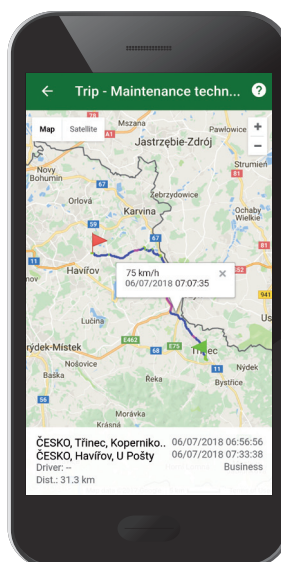
Display of current location



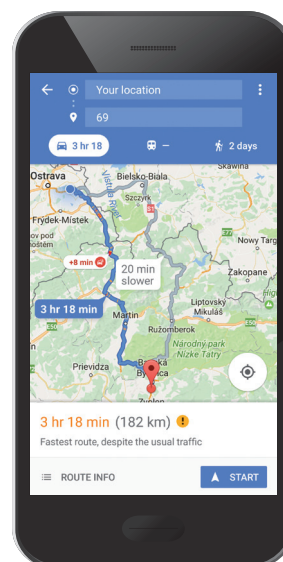
Choose a tracker in the menu



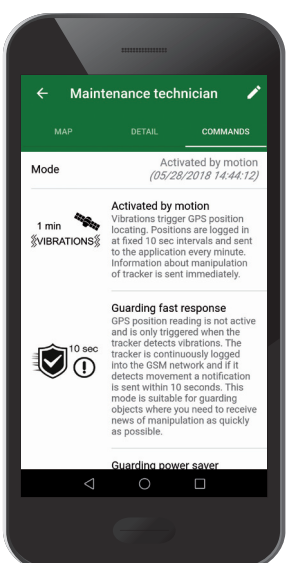
History of movements (trips)



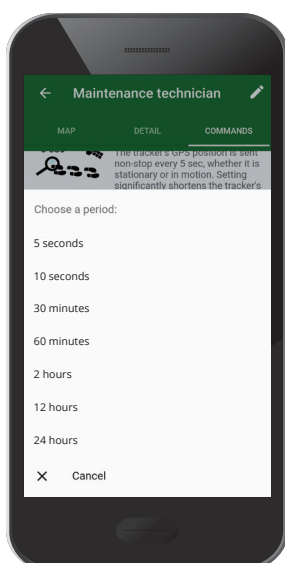
GPS navigation with route display



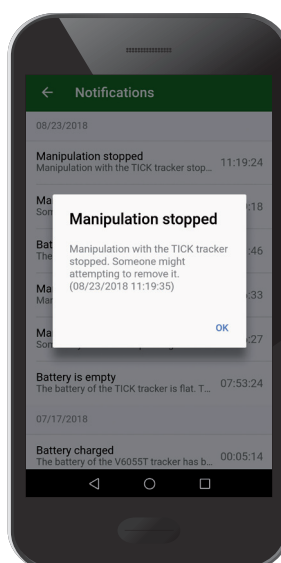
Setting operating modes



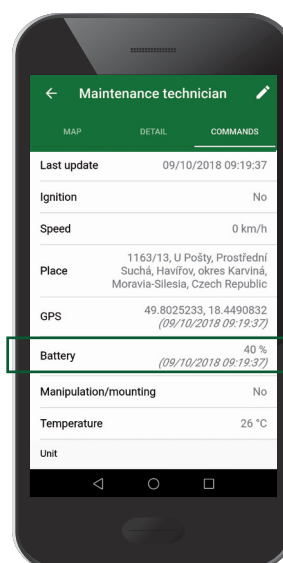
Choosing mode time intervals



Notification of set events

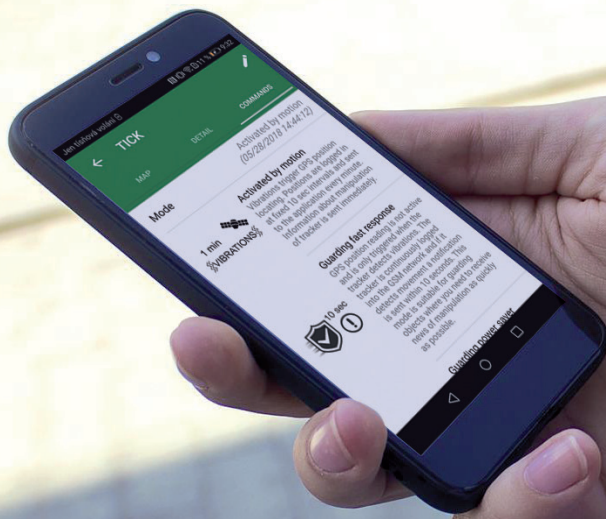


Control of the battery charge level status of the tracker before further usage



Download the TICK tracker application here:





A DEVICE THAT CAN OPERATE FOR UP TO 1 YEAR WITHOUT CHARGING

The device is capable of meeting not just all standard functions but also more demanding requirements for GPS monitoring. Continuous sending of GPS positions is very demanding on energy levels and influences the endurance of the battery. The TICK GPS tracker enables the user to choose between 7 operational modes, these modes influencing the operation time of the device without the need to recharge. Choose the optimum operational mode for your monitoring and extend the length of time that the battery (of the device) will operate without the need to recharge.

Operating modes

ABM – Activated by Motion

The device switches on GPS at the instant when motion is detected. If the device is not in motion, GPS switches off.

- When moving, locations are registered every 10 sec and sent to the mobile applications once a minute.

Time GPS is switched on	Endurance (hours)	Endurance (days)
GPS is idle (the device is not in motion)	6240	260
1 hour motion/23 hours idle	912	38
4 hours motion/20 hours idle	264	11
6 hours motion/18 hours idle	180	7,5
8 hours motion/16 hours idle	132	5,5
12 hours motion/12 hours idle	84	3,5
Constantly in motion	36	1,5

Usages: monitoring vehicles, people, parcels, etc.

Guarding fast response

GPS position reading is not active and is only triggered when the tracker detects vibrations. The tracker is continuously logged into the GSM network and if it detects movement a notification is sent within 10 seconds. The tracker is ready to immediately receive messages to switch to a different mode e.g. Pursuit.

Endurance (hours)	Endurance (days)
480*	20*

Usages: The mode is suitable for guarding objects that you are nearby to - you can intervene immediately. Examples might include a bicycle outside a pub, tools in a car by a hotel or tools on a construction site during working hours.

Guarding power saver

GPS position reading is not active and is only triggered when the tracker detects vibrations. If the tracker detects movement it logs into the GSM network and a notification is sent within 90 seconds. The tracker is ready to receive messages to switch to a different mode e.g. Pursuit at the time when the monitored asset moves.

Endurance (hours)	Endurance (days)
6240*	260*

Usages: The mode is suitable for long-term guarding of objects e.g. for guarding cottages, quadbikes in a garage, bikes in a bikeshed, garden furniture, caravans, motorcycles. The battery life is longer when using this guarding mode.

* N.B. This applies in conditions where the tracker is permanently idle / without vibrations.

Pursuit

GPS locations are sent continuously every 5 sec regardless of whether the monitored object is moving or standing. After 60 minutes the device automatically switches to ABM mode so that the battery is not completely run down. Mode changes (from ABM to Pursuit) can be set repeatedly.

Motion status	Endurance (hours)
It does not matter if vehicle is moving or standing	8 – 30 (depending on the availability of the GSM signal)

Usages: monitoring moving vehicles. Gives instant information of route and turns off the route.

Standby

The tracker automatically does not monitor locations, seize detection or accelerometer, but is ready to **immediately** accept a signal for switching into a different mode (ABM, Pursuit, Asleep, Periodic wake up) for starting the monitoring process.

Motion status	Endurance (days)
It does not matter if vehicle is moving or standing	32

Usages: monitoring children, monitoring bikes (one-off enquiry - where the monitored Asset is).

Asleep

The tracker automatically does not monitor locations, seize detection or the accelerometer, but is able **after a preset** interval to accept signals for switching to a different mode (ABM, Pursuit, etc.).

Pre-set interval for changing mode	Endurance (hours)	Endurance (days)
30 minutes	1848	77
60 minutes	3072	128
12 hours	7896	329
24 hours	8520	355

Usages: monitoring bikes, containers, etc. Suitable for lengthened battery life.

Overview of operational modes:

Mode	ABM – Activated by Motion	Guarding fast response	Guarding power saver	Pursuit
Active GSM	✓ In motion/ ✗ idle	✓	during alarm	✓
Active GPRS	✓ In motion/ ✗ idle	during alarm	during alarm	✓
Active GPS	✓ In motion/ ✗ idle	during alarm	during alarm	✓
Seize detection	✓	✓	✓	✓
Montion sensor active	✓	✓	✓	✓
Device endurance	1,5 – 260 days	20 days	260 days	8 – 30 hours

Mode	Standby	Asleep	Periodic wake up	Power OFF
Active GSM	✓	Acc. to interval	Acc. to interval	✗
Active GPRS	✗	✗	Acc. to interval	✗
Active GPS	✗	✗	Acc. to interval	✗
Seize detection	✗	✗	✗	✗
Montion sensor active	✗	✗	✗	✗
Device endurance	32 days	77 - 355 days	58 – 340 days	–

During charging on a (switched on) charging mat, the tracker is always constantly logged on to GSM. This means it is possible to switch to another operational mode at any time.

Periodic wake up

The tracker wakes up after a pre-set interval, takes GPS location, sends this information and then goes back to sleep.

Period for sending location (device wake up)	Endurance (hours)	Endurance (days)
Every 60 minutes	1392	58
Every 2 hours	2400	100
Every 24 hours	8160	340

Usages: monitoring containers, wagons. An advantage is the significantly lengthened operating time.

Power OFF

This is the recommended mode to use when storing the device. All tracker functions are completely switched off. It is possible to wake up the device and set the required mode during charging of the device.

Battery life may vary depending on hardware and firmware. Find out your version on:
www.namsystem.com/tick-activation



28 years tradition in developing and producing technology

We are a respected producer and supplier of our own hardware and software solutions for monitoring technology. We have been on the market since 1990 and our main focus is on security applications. We offer products for monitoring centres and transmission of data in various applications that meet the highest operational demands.

References:

- Small businesses
- Industrial zones
- Power stations and industrial companies
- Construction companies
- Agricultural companies
- Transport and logistics companies
- Security agencies
- Fire brigades
- City police
- Hospitals, schools, town councils

NAM system product solutions:

TICK GPS TRACKER

Hardware and software for GPS monitoring of assets

HELPCARE

System for calling help and increasing the safety of monitored people

TRACEWATCH

Guard tour software for controlling patrols and for guarding monitored property

REGGAE COMMUNICATORS

Devices for transmitting data from monitored Assets to ARCs



NAM system – stable company in the heart of Europe

NAM system, a.s.

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Operational Programme Enterprise
and Innovations for Competitiveness