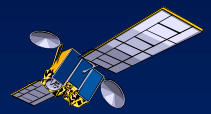
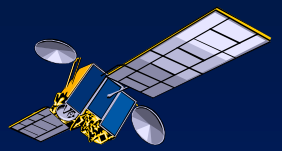
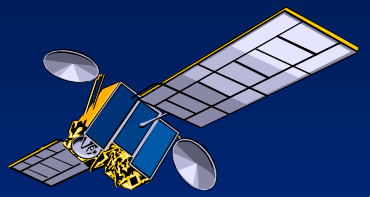
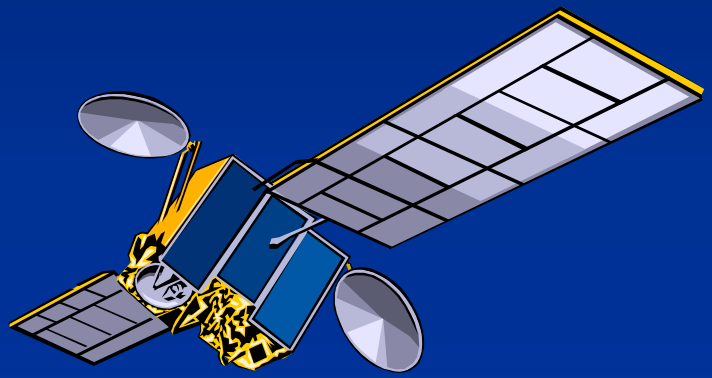






The satelite navigation as a support

in a search mission



DIFFICULTIES:

- how to divide not well known region into smaller areas and how to explain individuals and searching groups to understood easily where their searching terrains are
- how to supervise momentary location of individuals or searching groups during actual searching is in progress
- how to effectively direct the individuals or searching groups, help them with some information about the terrain in front of them or navigate them to their destination in the shortest or the most appropriate way
- how to evaluate, either during the search or in later analysis, exactly which areas were scaned and which were left out and based on this information where to direct further search activites
- how to explain thoroughly, in case of continuing of intervention, the next coming individuals or groups the work, which was allready done (searched area) and how to direct them to their searching terrain in order not to be left out or searched twice

EQUIPMENT

- portable computer
- navigation software – ***OoziExplorer, Garmin – MapSource***
- manual and stationar radio transmitter
- manual GPS – ***Garmin GPS map 60 CS***

PARTICIPANTS

- CENTRE (112)
- LEADER OF A RESCUE OPERATION
- LEADERS OF SEARCHING GROUPS
- INDIVIDUALS, DOG HANDLERS
- STATION, OPERATOR, MINUTE SECRETARY

CENTRE

- gathers information, check and re-check
- if ordered by team leader, convoke the team (dog hanlders, divers…)
- keeps the contact with the person who gave the initiation for further information
- restore the communication with the missing person???
- forward all the information to the head of intervention

PREPARATION
the head of intervention

- direct conversation with the missing person, with the person who initiate (report the missing), with the last eyewittness, with local people
- integrate the short ‘’story’’ with all the crucial data
- based on upper data decides which kind and how many rescuers he needs
- assign the team leaders
- assign the call signs and the way of communication

PREPARATION
the head of intervention + team leaders

- determine the size and the boundries of the areas (input PC)
- elaborate the searching plan (priorities)
- concepts of searching on each area (sectors)
- determine the necessary team(s) on each area

PREPARATION
BASE CAMP / operator

- prepare the minute book of the searching intervention
- prepare the equipment for taking allong on the searching area (PC, manual radio transmitter, backup power, GPS…)
- input of all known data into PC, input of districts and area(s)
- copy of a map in scale
- determine the place of a mobile (temporary) base

BASE

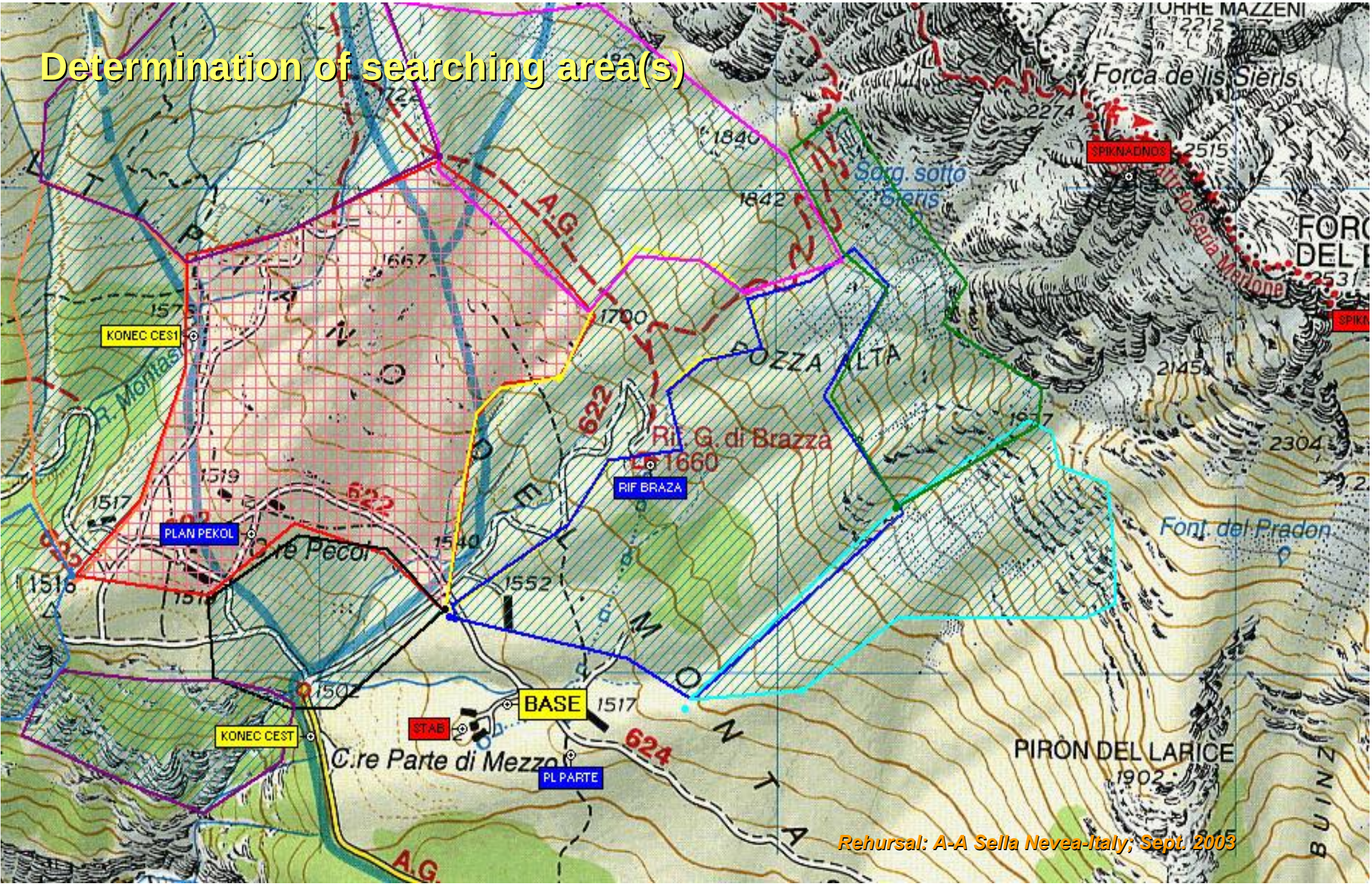
Rehursal: A-A Vršič; Sept. 2003

MOBIL-TEMPORARY BASE

Rehursal: 24 hour Germani 2005


PREPARATION
the head of intervention + team leaders
SOUTH FACE
YUGOSLAV ROUTE
Nov. 87
Jan. 88
Rehursal: A-A Vršič; Sep. 2003


PREPARATION
the head of intervention + team leaders
Rehursal: A–A Spittal; sept.2005

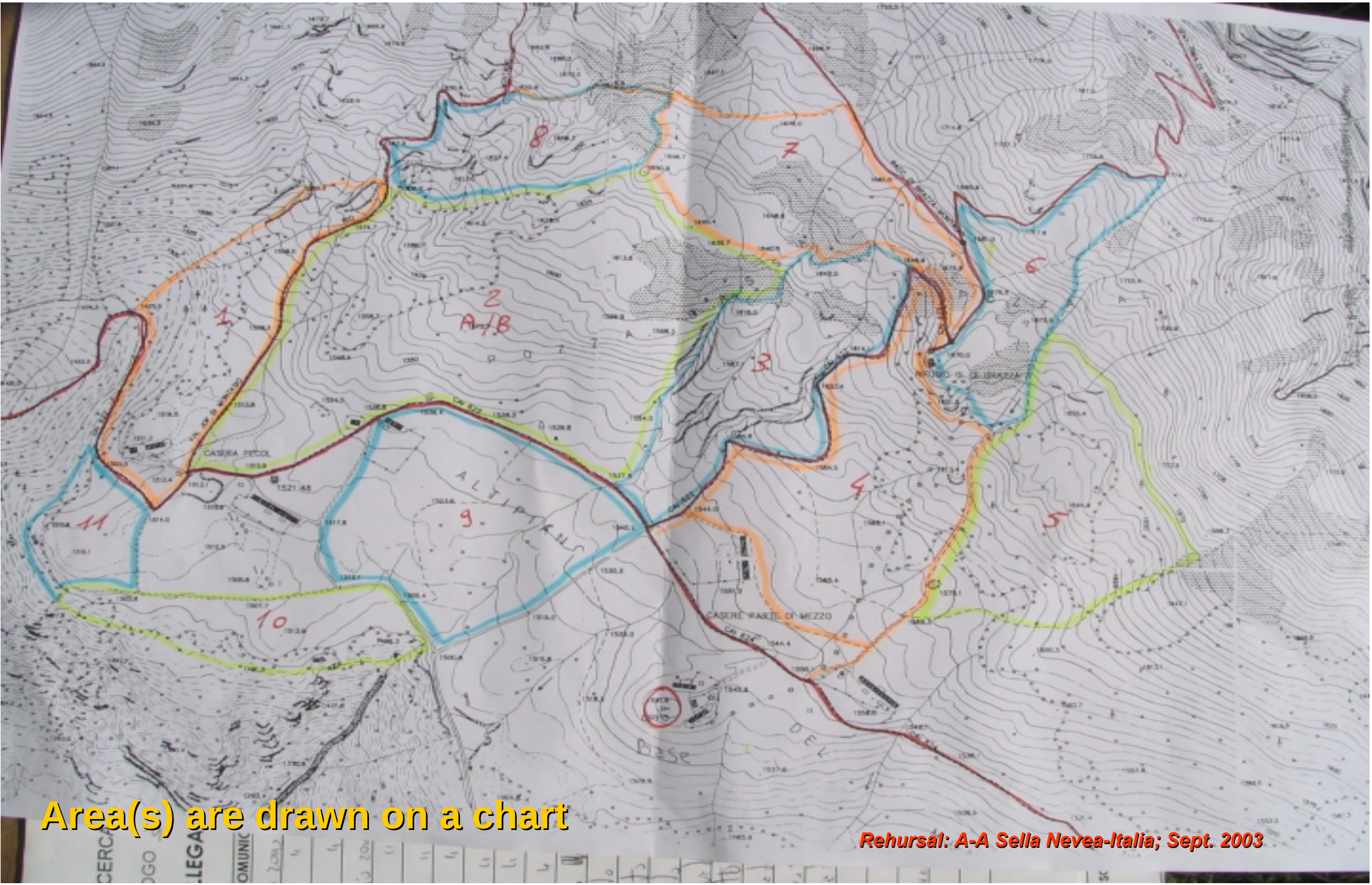

Determination of searching area(s)
KONEC CES1
PLAN PEKOL
RIF BRAZA
BASE
STAB
KONEC CEST
PL PARTE
Rehursal: A-A Sella Nevea-Italy; Sept. 2003

DEPARTURE
Team leaders + rescuers (dog handlers)

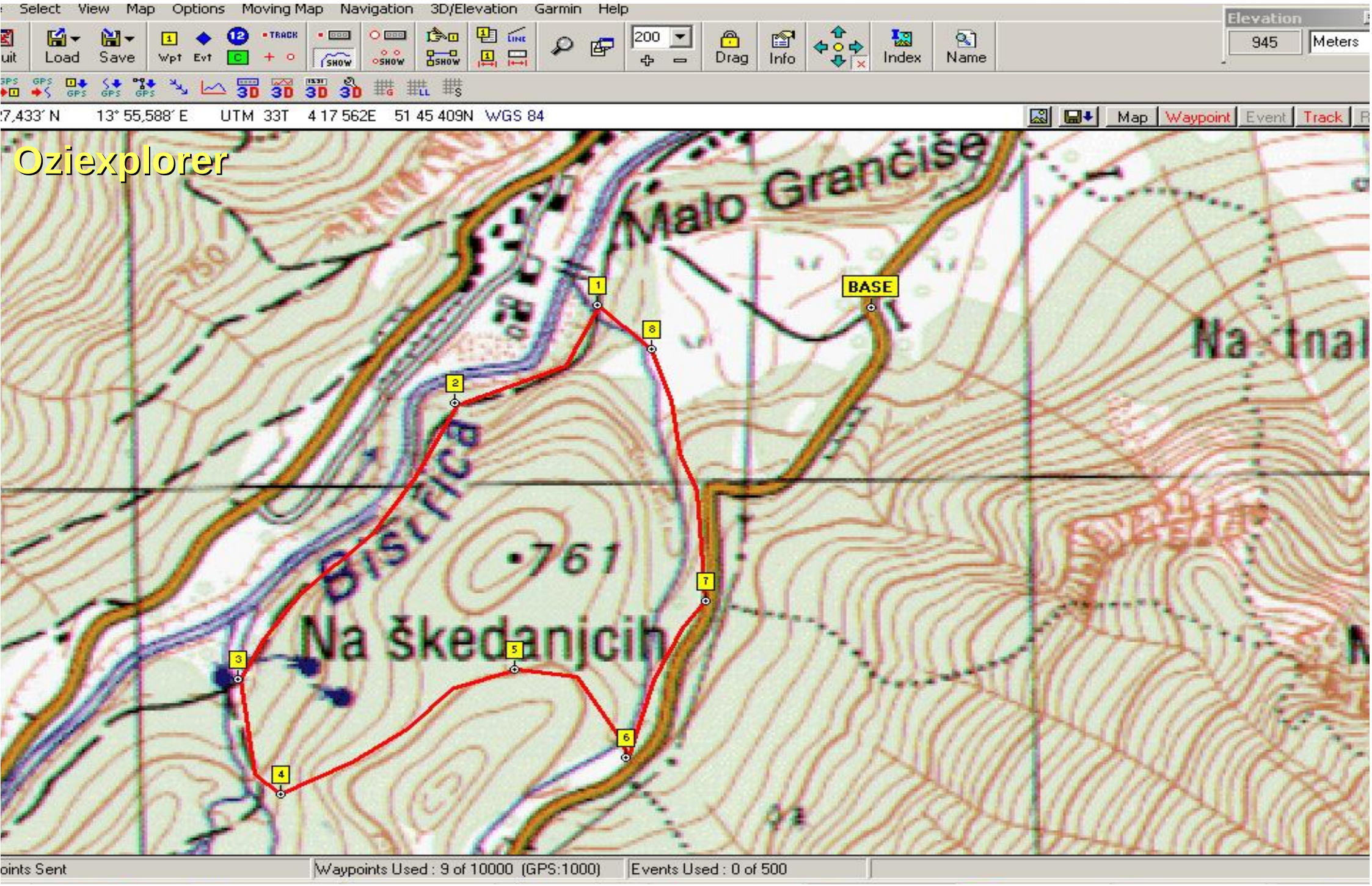
- check personal protective and preventive equipment (dog)
- check technical equipment (manual radio transmitter, GPS, backup power)
- check GPS (calibration, date, measure units)
- compare momentary position (at least with one of the other rescuers)
- check the communication (mobile radio transmitter)
- operator input EQUAL data to all devices (areas, districts, WPT)
- on copy of a map manually draw area(s) and important WPT

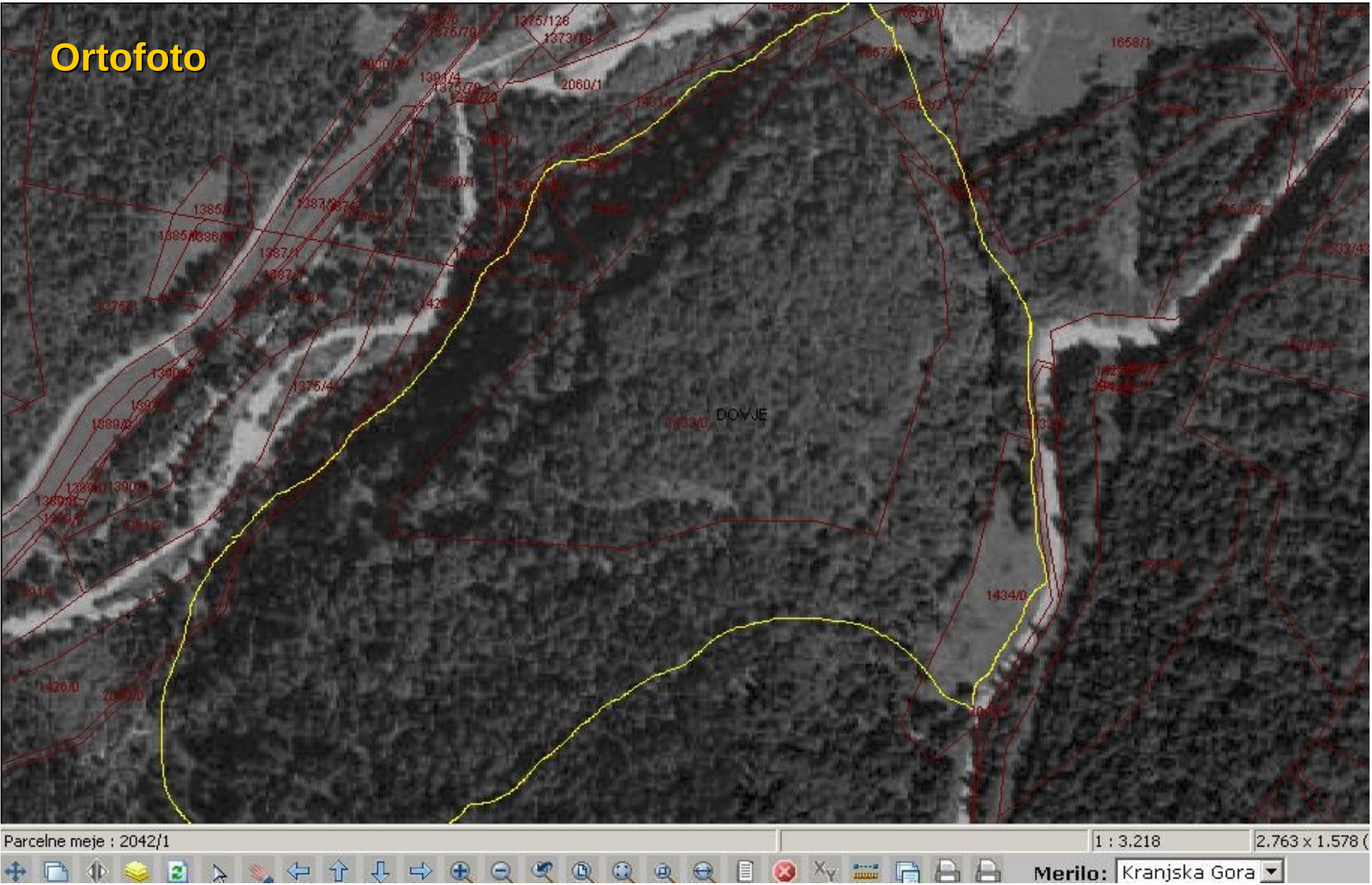
PREPARATION OF TEAM(S)

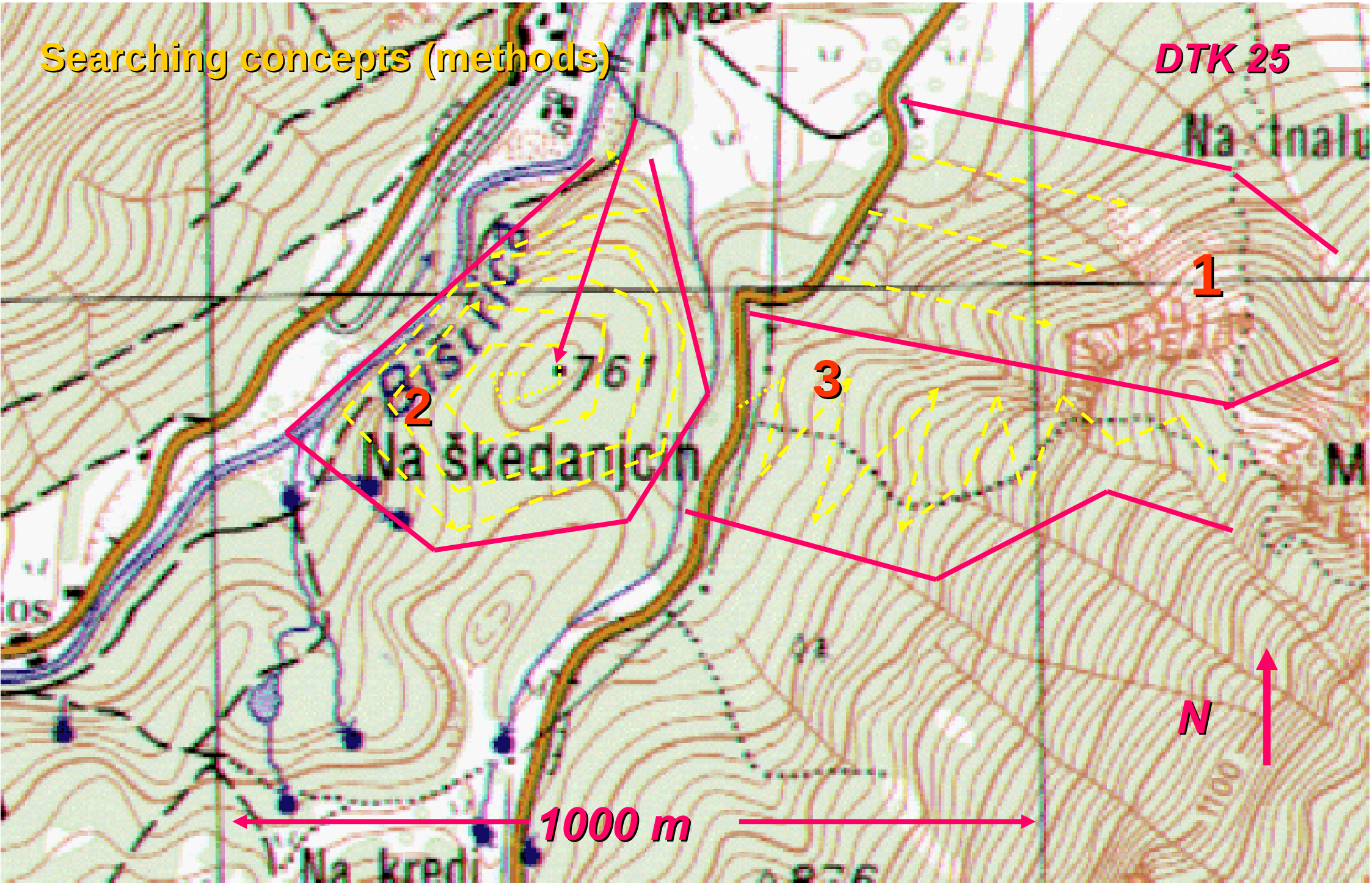
Rehursal: A-A Vršič; Sep. 2003


Area(s) are drawn on a chart
Rehursal: A-A Sella Nevea-Italia; Sept. 2003


titled - MapSource
Edit Find Transfer View Tools Utilities Help
Slovenia Adria
300 m
Highest
Granccisse 844m
Bistrica
Triglavska Muzejska Zbirka
Sveti Klemen
908
907
800
700
BASE
880 m
1
2
3
4
5
6
7
8
900
1000
1400
N
Mapsource
(s) Selected
Lat/Lon hddd°mm'ss.s"(WGS 84)
N46 27 08.5 E13 56 46.6
GPSmap 60CS
Contour
820m
N 46°27.009'
E 013°56.330'
12
BASE
200m
mapsource
GARMIN
IN
OUT


Select View Map Options Moving Map Navigation 3D/Elevation Garmin Help
Load Save Wpt Evt TRACK
200
Drag Info Index Name
Elevation
945 Meters
7,433′ N 13° 55,588′ E UTM 33T 4 17 562E 51 45 409N WGS 84
Map Waypoint Event Track
Oziexplorer
Malo Grančiše
BASE
Bistrica
761
Na škedanjcih
1
2
3
4
5
6
7
8
oints Sent
Waypoints Used : 9 of 10000 (GPS:1000)
Events Used : 0 of 500


Ortofoto
DOVJE
Parcelne meje : 2042/1
1 : 3.218
2.763 x 1.578 (
Merilo:
Kranjska Gora


Searching concepts (methods)
DTK 25
1
2
3
761
Na Škedanjcih
N
1000 m

DEPARTURE

- departure of individual MUST BE RECORDED (where, when, signature)
- movement of groups to the start points of the search area(s)
- setting up the mobil-temporary base
- testing communications

GORSKA REŠEVALNA SLUŽBA SLOVENIJE
Postaja ....GRS Slovenije

MINUTE - SEARCH OPERATION

Check list of departures and arrivals

start of intervention: date ....., hour... .: ....., **meeting point:** .....,
area (name chart): .....
region (write boundary points): . A: ....., **B:** ....., **C** .....
D: ....., E: .....
the head of intervention from police: ..... **GRS:** .....
end of intervention: date: ..... hour: .....

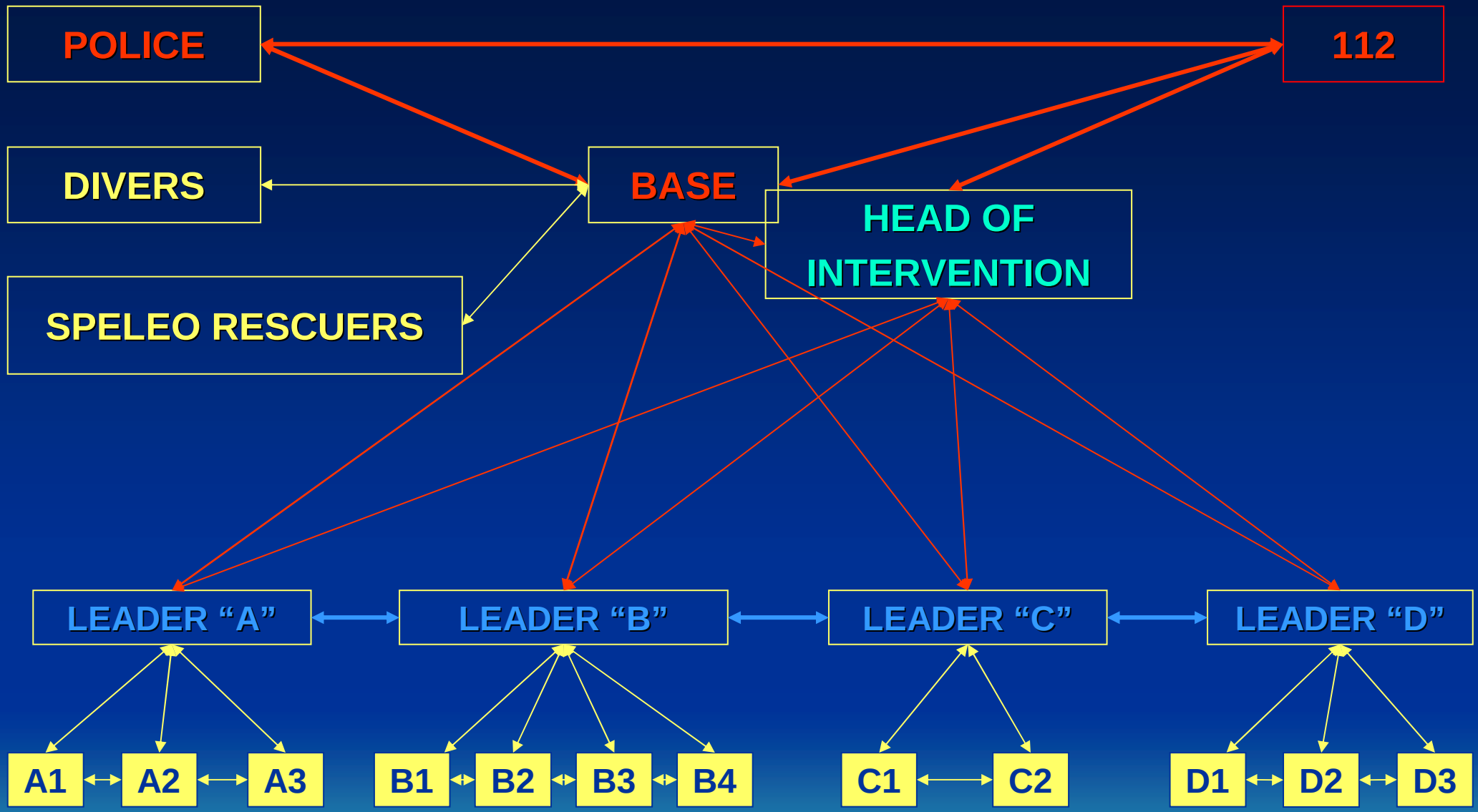
Nr.	name / station	call sign	region	departure / signature	arrival / signature	NOTICE	teamleader.VS rescuer VRP rescuer R
1.							
2.							
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.							

Departure on a terrain

Rehursal: A-A Vršič; Sept. 2003

COMMUNICATION

- base / centre (frequency “A”)
- base / the head of intervention (frequency “B”)
- base / team leaders (frequency “B”)
- base / rescuer / base (frequency “C”)
- team leader / team leader (frequency “B”)
- team leader / rescuers (frequency “C”)
- rescuer / rescuer (same group – frequency “C”)


POLICE
112
DIVERS
BASE
HEAD OF INTERVENTION
SPELEO RESCUERS
LEADER "A"
LEADER "B"
LEADER "C"
LEADER "D"
A1
A2
A3
B1
B2
B3
B4
C1
C2
D1
D2
D3

INTERVENTION

Rescuer

- the very first contact with Base of every group (team) or individual from start point of searching area
- cycle communuication at every extra ordinery event
- even if the communication fails, the rescuer mark and save WPT in regular cycles

GORSKA REŠEVALNA SLUŽBA
SLOVENIJE
Postaja .....

MINUTE - SEARCH OPERATION

Check list of data sent by rescuer

Date: .....
Area: .....
Name / Call sign: .....

	24h	hdd mm,mmm / m		m	sent to point		mark	NOTICE / REMARKS
Nr.	time	N	E	altitude	route/deg.	dist./m	X	
1.								
2.								
3.								
4.								
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								
13.								
14.								
15.								

Minute secretary: .....

DATA LOG – search operation

Rehursal: A–A Spittal; sept.2005

INTERVENTION
BASE / operator

- operator warns, advise, directs
- gives news of all new incoming data related to rescue operation
- sends all additional help, transport
- directs when returning back to Base

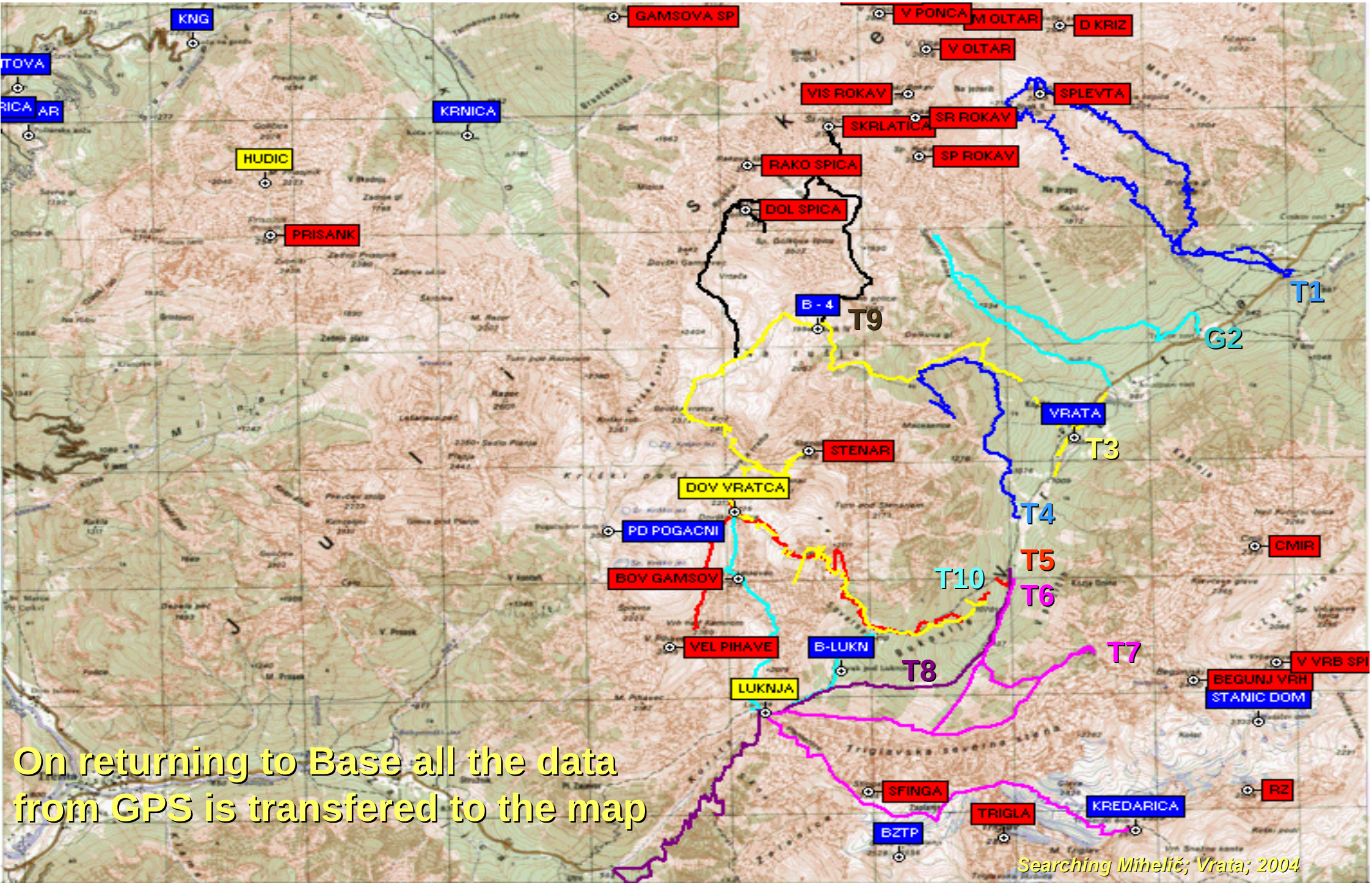
CONCLUSON OF INTERVENTION
BASE / operator

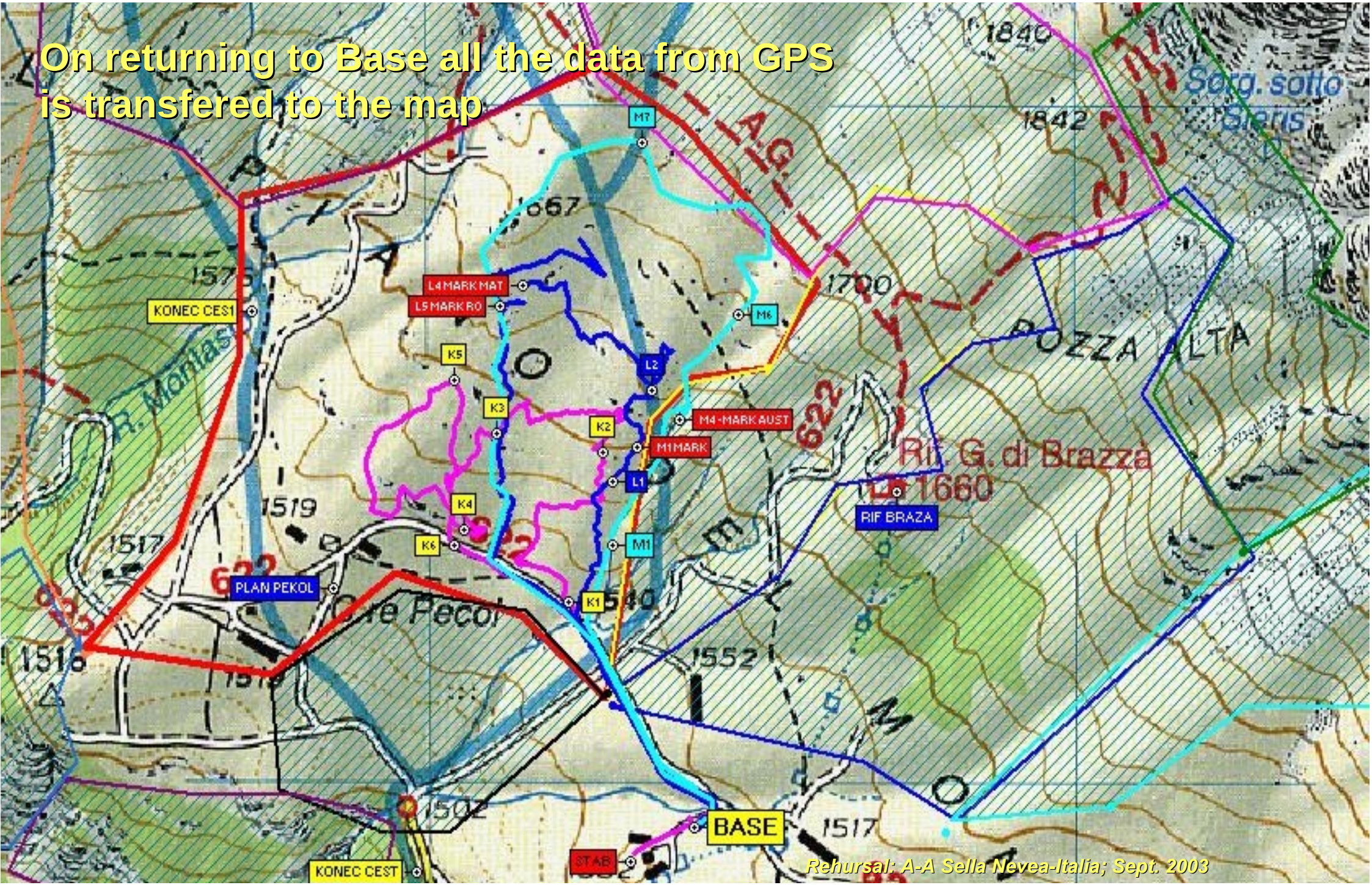
- the rescuer who has found the victim with the help of head of intervention and operator organize further work (First aid, transport)
- by the direction of the head of intervention he informs all rescuers on the field that all the searching activities are stopped (the end of intervention)
- operator gives all the needed help to all groups or individuals on returning back to starting point or Base
- at arrival of rescuers he transfer all data into PC
- immediately the operator starts with editing (composing) of data

CONCLUSION OF INTERVENTION

rescuer

- by returning to Base EVERY RESCUER is obligated to check by the operator and confirm his arrival with his signature
- every rescuer passes his GPS to the operator for transfer data to PC
- rescuer add information for the record in minutes book


KNG
GAMSOVA SP
V PONCA
M OLTAR
D KRIZ
V OLTAR
VIS ROKAV
SPLEVTA
SKRLATICA
SR ROKAV
SP ROKAV
KRNICA
HUDIC
RAKO SPICA
DOL SPICA
PRISANK
B - 4
T9
T1
G2
VRATA
T3
STENAR
DOV VRATCA
T4
PD POGACNI
CMIR
T5
T10
T6
BOV GAMSOV
VEL PIHAVE
B-LUKN
T8
T7
V VRB SPI
BEGUNJ VRH
STANIC DOM
LUKNJA
SFINGA
RZ
TRIGLA
KREDARICA
BZTP
On returning to Base all the data
from GPS is transfered to the map
Searching Mihelič; Vrata; 2004


On returning to Base all the data from GPS is transfered to the map
M7
L4 MARK MAT
L5 MARK RO
KONEC CES1
M6
K5
L2
K3
K2
M4 -MARK AUST
M1MARK
L1
K4
K6
M1
PLAN PEKOL
K1
RIF BRAZA
BASE
STAB
KONEC CEST
Rehursal: A-A Sella Nevea-Italia; Sept. 2003

CONCLUSION OF INTERVENTION

head of intervention + team leaders

- check of presence of all rescuers
- overview of gathered data
- in case, that the intervention is concluded, analysis is not necessary done immediately on spot
- in case, that the intervention is temporary stopped, partial analysis should be done at once
- prepare the plan for next tasks (priority areas, number of necessary rescuers…)
- they ask for some additional explanation from individual rescuers

DISADVANTAGES

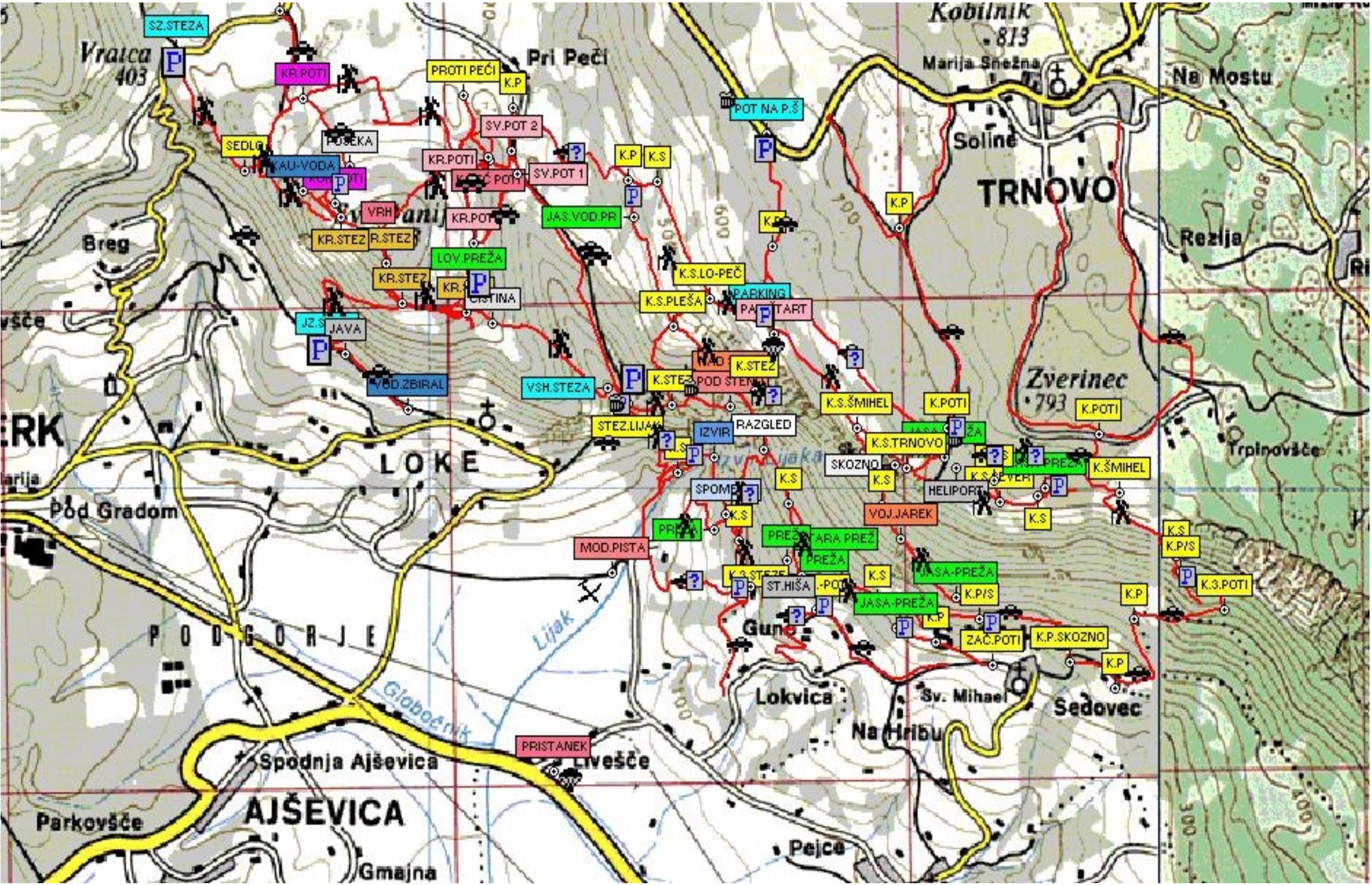
- energy
- every technical equipment can fail without warning
- use of different map datum and coordinate systems
- bad signal in thick leafy forests, rift-valley…

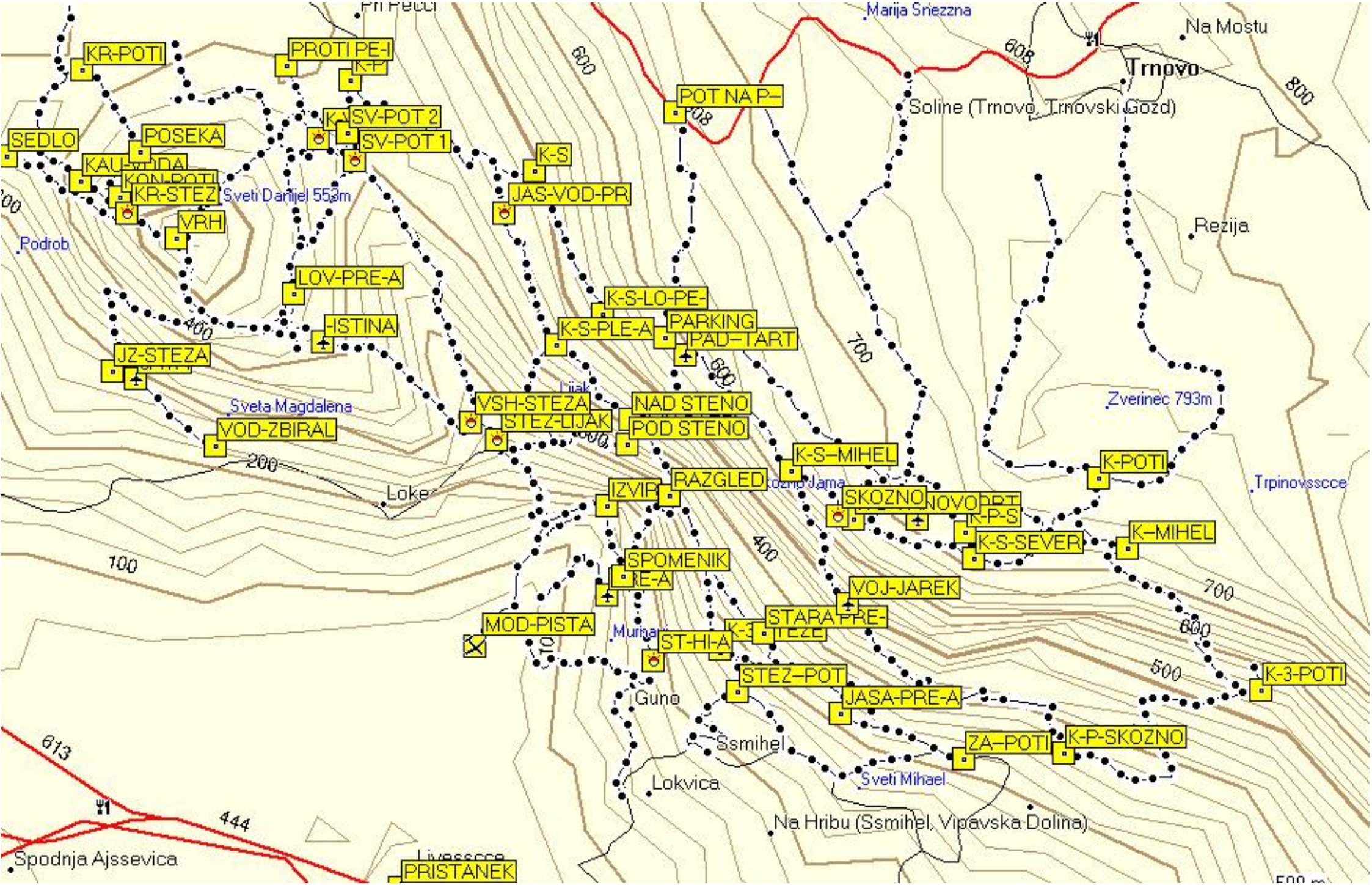
ADVANTAGES

- we know at any and for all the time the position the group or individual
- we know at any and for all the time what work has been done
- directing groups and individuals ''in live''
- if difficulties arise we can send help or transport at the shortest way
- we can do partial or final analysis (recapitulation) of events quickly

DATA BASE

- reproduction of all tracks on our searched area
- commentary on quality and conditions on roads and paths
- reproduction of all important points
- commentary to all important points
- reproduction of positions, where accidents happen more often or where the missing persons stick


SZ.STEZA
Vrtača
403
KR.POTI
PROTI PEČI
K.P
Pri Peči
SV.POT 2
SEDLO
POSEKA
KAU-VODA
KR.POTI
SV.POT 1
K.P
K.S
VRH
KR.POT
JAS.VOD.PR
KR.STEZ
R.STEZ
LOV.PREŽA
KR.STEZ
KR.
CISTINA
JZ.S
JAVA
VOD.ZBIRAL
VSH.STEZA
K.STEZ
POD STEMN
STEZ.LIJAK
IZVIR
RAZGLED
K.S.LO-PEČ
K.S.PLEŠA
PARKING
PA
TART
K.STEZ
K.S.ŠMIHEL
K.POTI
K.S.TRNOVO
SKOZNO
K.S
K.S
HELIPORT
VOJ.JAREK
K.S
K.ŠMIHEL
K.S
K.P/S
K.3.POTI
K.P
K.S
JASA-PREŽA
K.P/S
JASA-PREŽA
K.P
ZAČ.POTI
K.P.SKOZNO
K.P
MOD.PISTA
PRE
PREŽ
ARA PREŽ
PREŽA
K.S
ST.HIŠA
-POD
PRISTANEK
Kobilnik
813
Marija Snežna
Na Mostu
Soline
TRNOVO
Rezlja
Zverinec
793
Trpinovšče
Breg
LOKE
Pod Gradom
POD GORJE
Lijak
Globočnik
Spodnja Ajševica
Livešče
AJŠEVICA
Parkovšče
Gmajna
Lokvica
Na Hribu
Sv. Mihael
Sedovec
Pejce


KR-POTI
PROTI PE-I
SV-POT 2
SV-POT 1
SEDLO
POSEKA
KR-STEZ
VRH
Sveti Danijel 553m
Podrob
LOV-PRE-A
-ISTINA
JZ-STEZA
Sveta Magdalena
VOD-ZBIRAL
Loke
JAS-VOD-PR
K-S
POT NA P–
K-S-LO-PE-
K-S-PLE-A
PARKING
PAD–TART
VSH-STEZA
STEZ-LIJAK
NAD STENO
POD STENO
IZVIR
RAZGLED
K-S–MIHEL
SKOZNO
K-P-S
K-S-SEVER
K–MIHEL
K-POTI
SPOMENIK
VOJ-JAREK
STARA PRE-
MOD-PISTA
ST-HI-A
STEZ–POT
JASA-PRE-A
K-3-POTI
ZA–POTI
K-P-SKOZNO
Guno
Ssmihel
Lokvica
Sveti Mihael
Na Hribu (Ssmihel, Vipavska Dolina)
Spodnja Ajssevica
PRISTANEK
Marija Snezzna
Na Mostu
Trnovo
Soline (Trnovo, Trnovski Gozd)
Rezija
Zverinec 793m
Trpinovsscce
Muriia
608
708
600
700
800
400
200
100
500
613
444

In the future…

We cannot do much more in planning or performing, but a rescuer or a dog handler may save some energy and precious time which is presently spent on managing a navigation device and informing us on the location. The leader of the individual rescue team will have a navigation device – GPS. The others in the group will be marked with GPS receivers, which will automatically transmit data to the base, where the track of their movement will delineate. The operator in the base will still offer support in the sense of navigation to individual rescuer and also by communicating with the leader of an individual group he will direct the whole rescue team.

The supervision and help are very welcome in the mission.

By supervising we provide lower risk and higher safety to the rescuer. We can correct mistakes simultaneously and thus shorten the time of the intervention.

After all, speed and safety are the main factors in the rescue mission.


Thank you