How to Kill Packet-Radio & APRS? Come to Serbia!

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Abstract

In this paper, we continue analyzing pervasive failures in Serbian policymakers' strange decisions, as well as continual country's ham radio leadership's wrongdoings – that all together significantly contributed not only to the stagnant status but also in the visible extinction of national-wide VHF & UHF ham radio data infrastructures.

1. Introduction

This is a continuity of a topic I started back in 2003 with a paper published in the proceedings of the "22nd Annual ARRL and TAPR Digital Communications Conference" (Skoric, 2003). For readers who are not familiar with issues we have in Serbia, I would like to give few facts:

- During the nineties I was appointed by the assembly of SRV (Savez radio-amatera Vojvodine, the ham radio union of YU7 area in the northern part of Serbia) to serve a voluntary office of the administrative secretary. My main tasks included preparing materials for YU7 executive board's meetings; moderating ham bulletin broadcast over the local voice repeater, as well as overseeing functionality of the union's packet-radio BBS. Those activities gave me a good chance to spot numerous wrongdoings in the union's leadership, and some of their bad acts were discussed in the aforesaid DCC paper. In the period of time when I was preparing that paper I had already abandoned all my 'official' roles in Serbian ham units (clubs and societies), and considered them as a way that reached its dead end. I also decided to go publicly with all and avoid any chance the wrongdoers link their bad decisions with me. In other words, I ceased any connection with governing people in Serbian ham organizations for good.)

- However, I did not expect that their further bad decisions would so negatively influence the status of ham data communications in the country, as well as my own legal capacities for participating within international amateur radio services, in the areas of packet-radio and APRS.

- After the mentioned DCC paper was published, I continued with promoting packet-radio and related ham modes by participating in domestic and foreign conferences as a member of IEEE, ACM, and similar societies. With an exception of few domestic events in early 2000s, when I got some financial support from my employers, all other conference costs I sponsored by only myself. It was not an issue for me because I considered those efforts and expenditures as a best contribution I could do for the prosperity of ham data modes, because after several years of maintaining packet-radio activity in YU7 area, I could only see its rapid demise - 'thankfully' to the inactivity and laziness in both YU7 and YU1 (the national-wide) ham leadership.

- Nevertheless, having run a BBS at home with both radio and Internet connectivity, as well as a

LAN-based testbed for performing experiments with various node software, I was independent and effectively isolated from negative influence initiated & produced by self-proclaimed 'elites' within YU7 and YU1 unions.

2. Bad Situation

2.1 Packet-radio

It should be noted that the rapid demise in existence and functionality of domestic AX.25 network was partially caused by NATO operations over the former FR Yugoslavia (i.e. the union of Serbia and Montenegro) in 1999. As a consequence of heavy bombardments, Serbia lost many commercial TV towers that for decades served not only for broadcasting information & entertainment content but also for installing ham radio repeaters. On the other side, the expansion of cell telephony and Internet connectivity – as global phenomenons – did not avoid Serbia. However, some of us – including this author, did not want to become 'Internet hams' or 'land-line-lids'. That was particularly visible in the no-Morse ham category in Serbia ("E"-class in the previous categorization). In fact, a good number of no-coders were very active in local and regional AX.25 networks because that class was compliant with CEPT regulations at the time. Figure 1 shows some of the author's personal and radio's permissions issued at the end of the previous millennium. Figure 2 makes it clear that the license was compliant with CEPT Class 2 ("ЦЕПТ класа 2" in Serbian Cyrillic). In those times that meant that the license holder was allowed to use his or her equipment above 30 MHz throughout Europe without Morse proficiency test. Such regulations gave an opportunity to a licensee to run packet-radio and APRS operations from almost everywhere within the old continent.

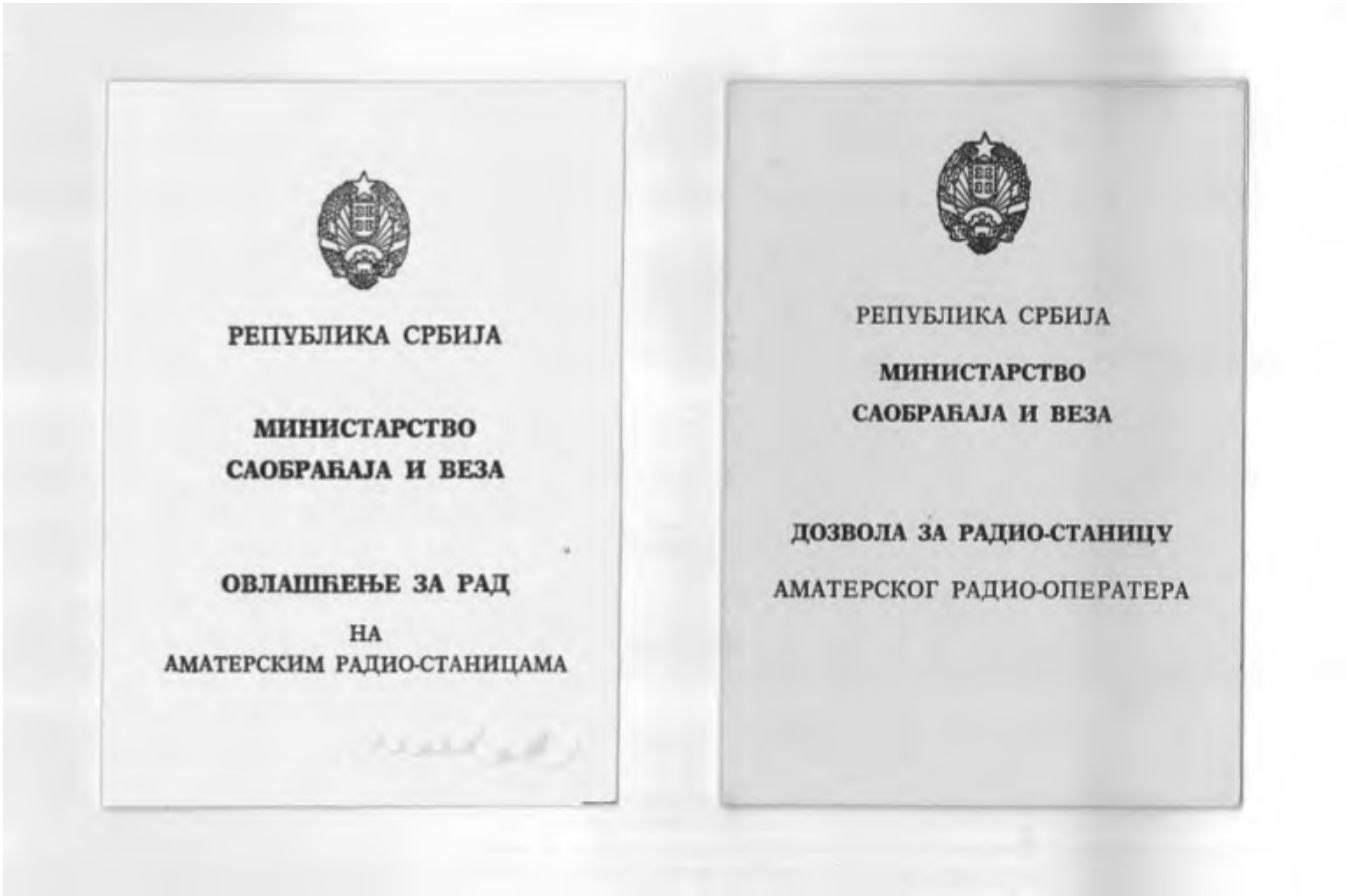
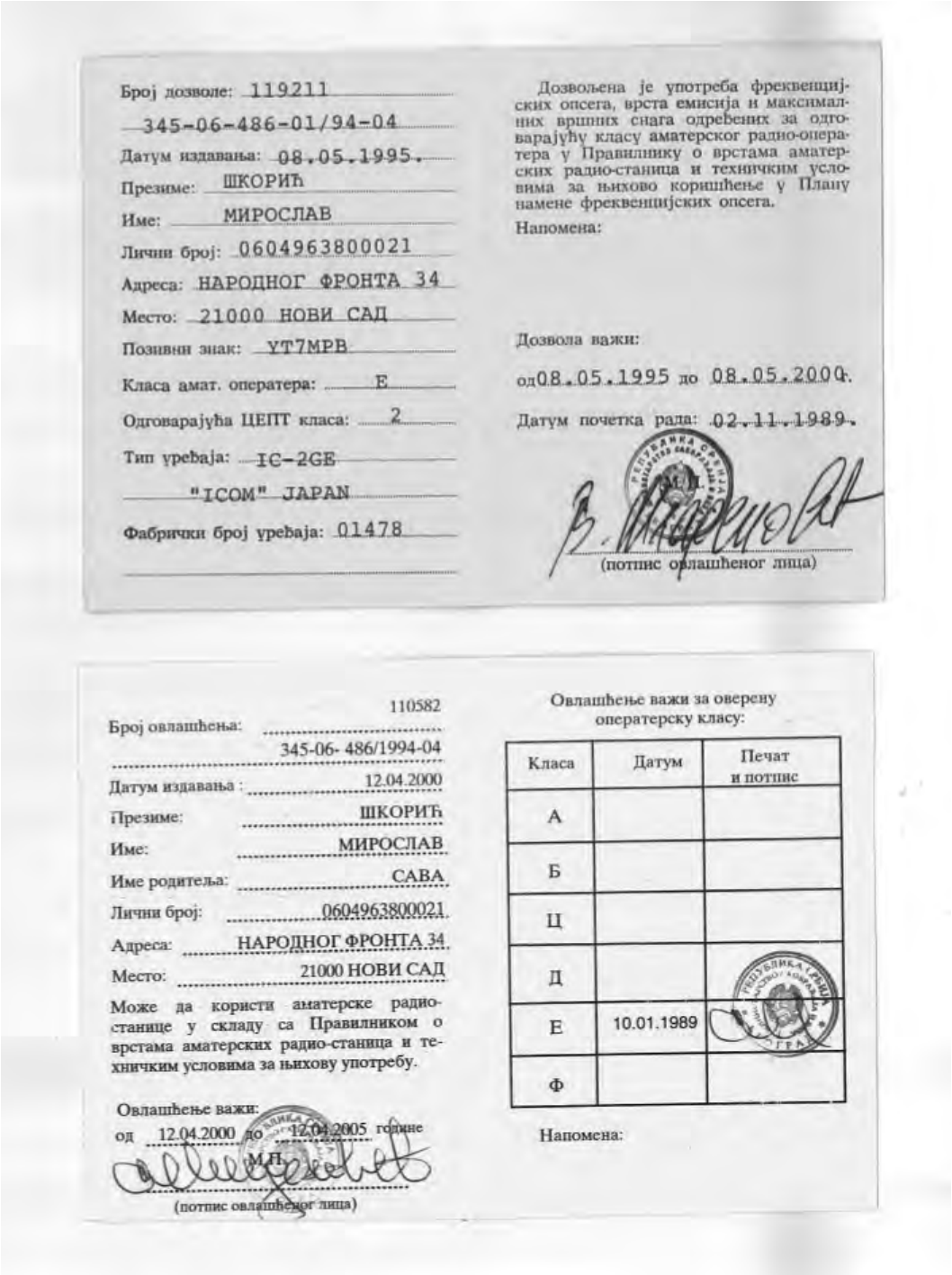


Figure 1. Ham radio permission (left) and Station permission (right), used in Serbia 15-20 years ago.

Modernization in communications has led to the removal of mandatory Morse test in many countries. New CEPT regulations were adopted, such as merging CEPT Class 1 (Morse) and CEPT Class 2 (no-Morse) into a single CEPT Class. The merger was motivated by intention to remove barriers in between those who practiced telegraphy modes, and those who did not.



Број дозволе: 119211
345-06-486-01/94-04
Датум издавања: 08.05.1995.
Презиме: ШКОРИЋ
Име: МИРОСЛАВ
Лични број: 0604963800021
Адреса: НАРОДНОГ ФРОНТА 34
Место: 21000 НОВИ САД
Позивни знак: YT7MPB
Класа амат. оператера: E
Одговарајућа ЦЕПТ класа: 2
Тип уређаја: IC-2GE
"ICOM" JAPAN
Фабрички број уређаја: 01478

Дозвољена је употреба фреквенцијских опсега, врста емисија и максималних вршних снага одређених за одговарајућу класу аматерског радио-оператера у Правилнику о врстама аматерских радио-станица и техничким условима за њихово коришћење у Плану намене фреквенцијских опсега.

Напомена:

Дозвола важи:
од 08.05.1995 до 08.05.2000.
Датум почетка рада: 02.11.1989.

М.П.
(потпис овлашћеног лица)

Број овлашћења: 110582
345-06- 486/1994-04
Датум издавања : 12.04.2000
Презиме: ШКОРИЋ
Име: МИРОСЛАВ
Име родитеља: САВА
Лични број: 0604963800021
Адреса: НАРОДНОГ ФРОНТА 34
Место: 21000 НОВИ САД

Може да користи аматерске радио-станице у складу са Правилником о врстама аматерских радио-станица и техничким условима за њихову употребу.

Овлашћење важи:
од 12.04.2000 до 12.04.2005 године
М.П.
(потпис овлашћеног лица)

Овлашћење важи за оверену оператерску класу:

Класа	Датум	Печат и потпис
А		
Б		
Ц		
Д		
Е	10.01.1989	
Ф		

Напомена:

Figure 2. Station permission (top) and Ham permission (bottom), used in Serbia 15-20 years ago.

Regardless those changes in the pan-European regulatory environment, I kept myself busy by continual improving the BBS facility at home. As mentioned earlier, I also had few computers in a home LAN, dedicated to ham experimentation, each of them equipped with different flavors of node & mailbox software (or different versions of the same type of software). That gave me a plenty of room for 'ham research' that resulted in even more conference papers, tutorial slides, and book chapters on ham radio in various educational publications. Related to that, up to now I produced book chapters of almost 200 pages in five books printed by American and European publishers. The sixth chapter is currently under review. My tutorial program includes around 250+ slides that I play in various forms & length – depending on preferences in hosting institutions and their academic schedules.

Unfortunately, it is a sad reality in Serbia that practically no one else is going to keep packet-radio alive and healthy in this country. For example, whenever I check my BBS's WP database for operators and mailboxes using the national prefixes, I get myself only (as shown in Figure 3). And I feel really bad when compare that result with checking for other countries, such as for US callsigns, as shown in Figure 4.

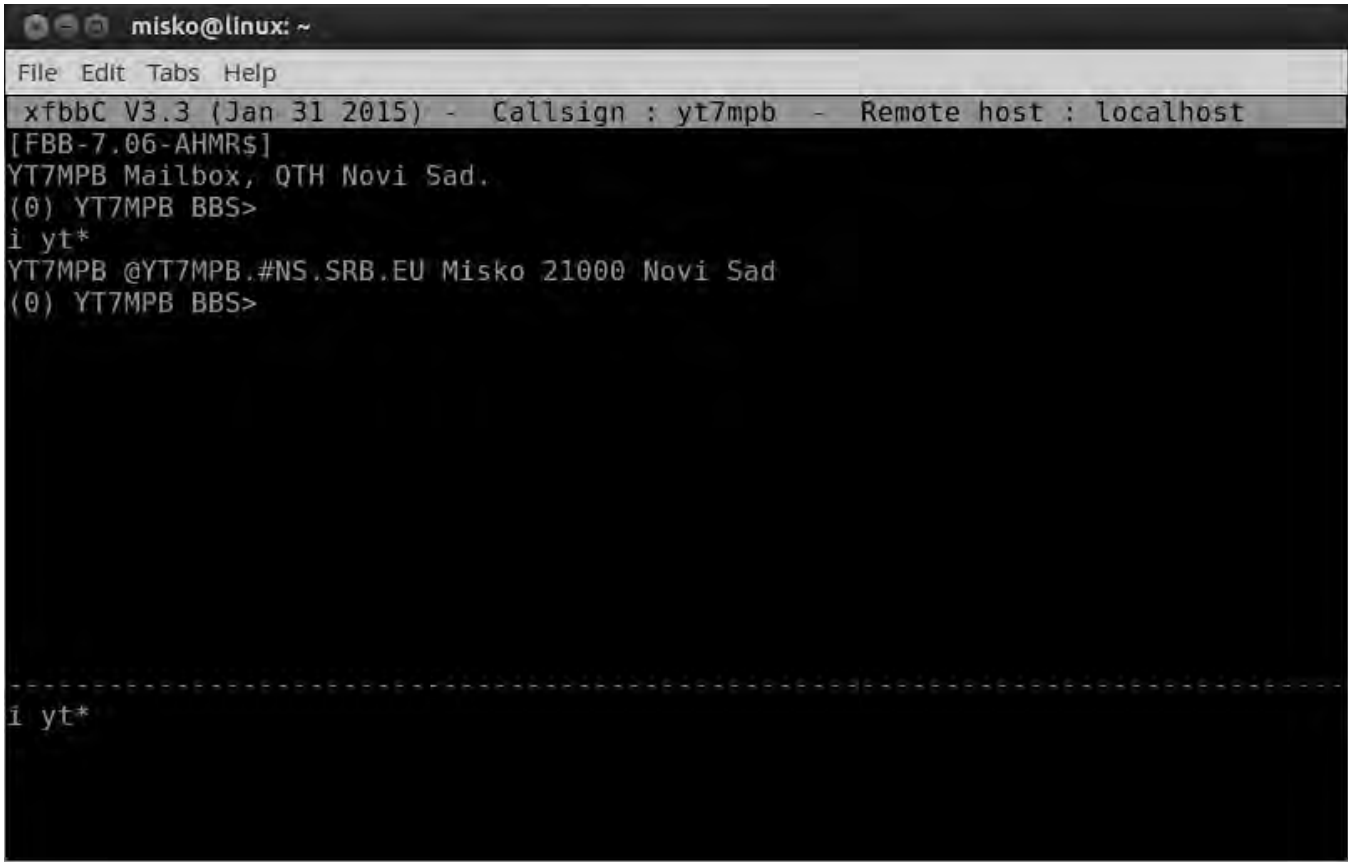


Figure 3. White Pages database returned only one record of Serbian packet-radio operators and mailboxes.

2.2 APRS™

Development of Automatic Packet Reporting System™ in Serbia is also in stagnant or even decreasing status. You bet, again 'thankfully' to the bad decisions of: (a) self-proclaimed 'elites' within domestic amateur radio unions, and (b) incompetent bureaucrats in the RATEL office (RATEL is the same as FCC in USA), which banished many mobile & portable hams to travel

abroad with their radios – as a consequence of promulgating no-Morse class "E" to a 'national' category – without previously existed compatibility with CEPT standards. Please note that the majority (if not all) of no-Morse hams in Serbia have been using portable and mobile VHF & UHF FM radios, fully suitable for various APRS operations.

And because the majority of those who posses such radios do not get anymore an incentive from the Serbian ham unions and regulators to use their gear when traveling outside the country's border, they do not have enough motivation to construct new APRS installations even here at home. That's bad.

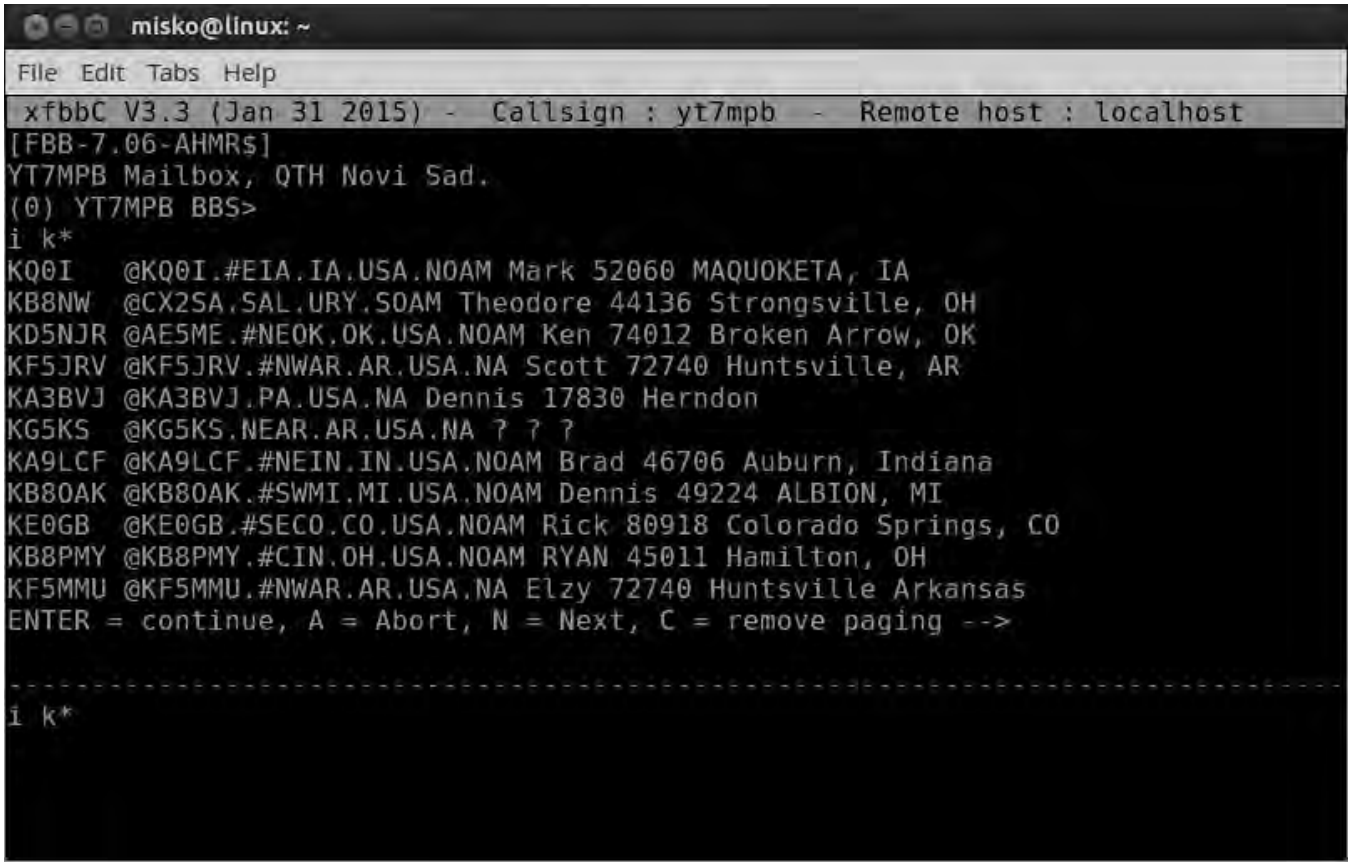


Figure 4. White Pages database returned data on many US packet-radio operators and mailboxes.

As a part of my research efforts, I entered the APRS world few years ago. Having in mind that my first VHF radio was dedicated to traditional 'connected-mode' packet-radio node & mailbox operations, and that my second radio (also attached to the same computer) was acting as an APRS 'propaganda outlet' for wider advertising the aforementioned node & mailbox, I have obtained another pair of radios to expand my ability in APRS operations. I opted for some relatively new and inexpensive Chinese products, such as Retevis RT82 and Radioddity GD-77. To my surprise, RT82 was fitted with an unusual 12-pin jack for attaching programming cable and external microphone/headphones. Unfortunately, I did not find a solution to modify – adapt that connector for wiring to a modem for the secondary APRS station I was planning to use with a laptop for portable ham activities. In that regard, GD-77 proved as more suitable for data modes because it was equipped with rather traditional 2.5 mm & 3.5 mm stereo jacks, identical in signaling and voltage polarity with my older FM radios. So, besides my main APRS location on the map, given in Figure 5 (labeled

as YT7MPB-1 node), I also added my secondary station YT7MPB-9 (labeled as a laptop device).

The portable set is mainly active when I am somewhere in the nearby university campus.

Figure 5. APRS map depicting YT7MPB-1 permanent location and YT7MPB-9 portable position.

Unfortunately, even though the wider city area of Novi Sad (named Нови Сад, Петроварадин, and Сремска Каменица in Figure 5) has population of some 350,000 where we have several dozens of active hams, most of the time my callsign remains alone on the city map. Furthermore, if you look to a regional-wide map, zoomed-out from the city one (Figure 6), which depicts APRS activities in Serbia, Croatia (9A), Slovenia (S5), Austria (OE), Slovakia (OM), Hungary (HA/HG), Ukraine (UR), and Romania (YO), you can see that besides my node and the local APRS digi YU0XFG-1 (located on the nearby mountain Fruska Gora), there is nothing else in Serbia. Again, 'thankfully' to the incompetence of authorities and ham radio 'elites' in Belgrade, the national capital!

(The content in Figure 6 was collected solely by reception of my own radio station, received via digipeater YU0XFG-1. Please do not get fooled by noticing some more APRS entities in Serbia that appear in aprs.fi after inserting 'radio' stations by using the Internet links! In opposite to that, please note the dense population of ham facilities in surrounding countries, particularly in Hungary. Compare it to the visible absence of any station in Belgrade area /labeled as Београд/, as well as in remaining parts of Serbia /Србија/ southern from Belgrade.)

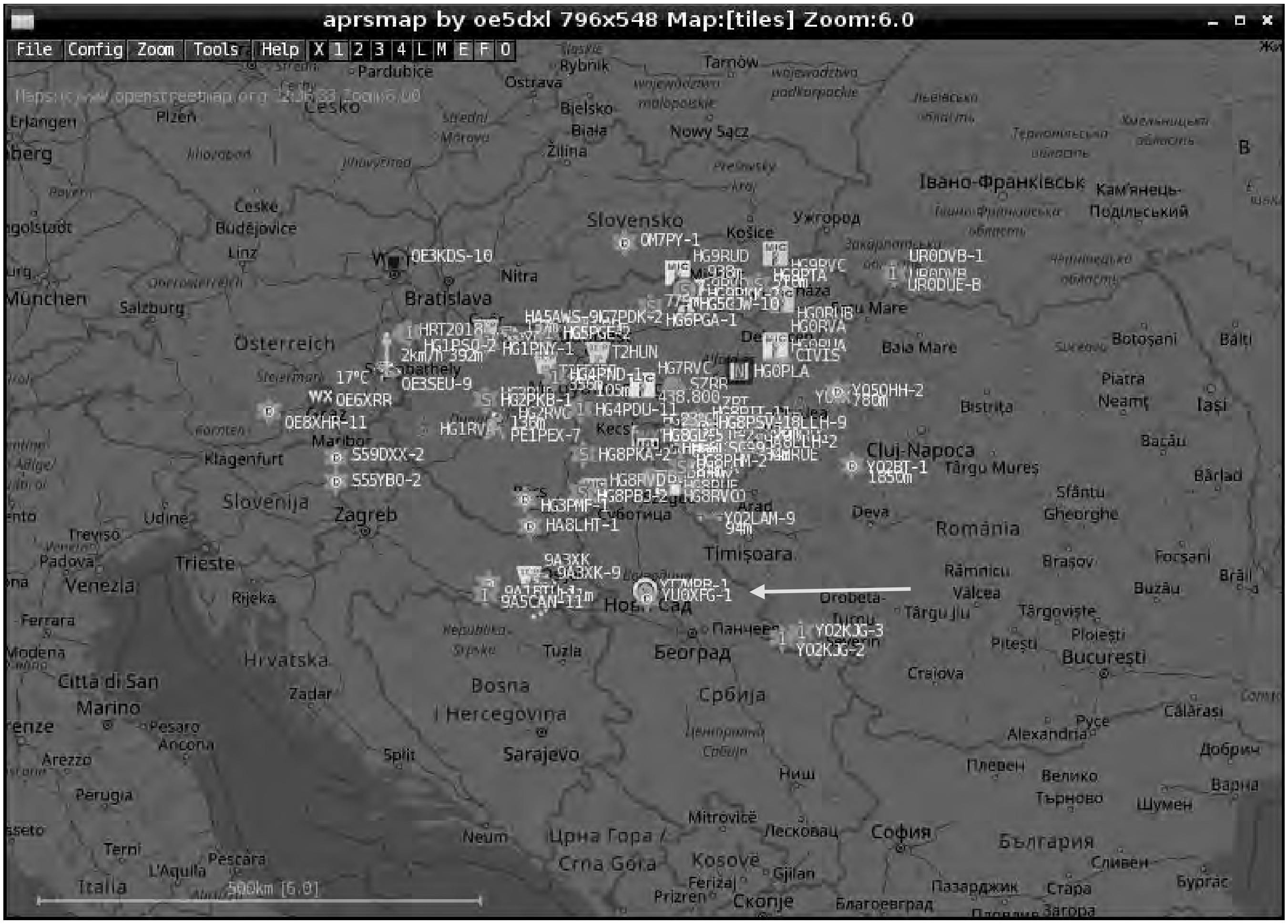


Figure 6. APRS map showing stations' positions throughout the region of Central-Southeast Europe.

3. Worsening the regulations

Some few years ago I needed to renew my then lapsed license. I had also wanted to perform some occasional ham radio activity during a planned conference travel to a foreign country. And I mentioned that during a phone-call contact with an administrative person in the SRS. The person let me know that I would not be allowed to use any ham radio abroad because my ham category was 'not harmonized with CEPT' after they changed the national ordinance on ham radio (somewhere in 2011 or like). Interestingly, he ignored my note that it was unconstitutional to remove citizen rights that existed for such a long time, and what had been clearly promulgated in all previous regulations, as well as broadly adopted in daily practices. So, what went wrong in Serbia with implementing pan-European CEPT recommendations?

As we know, recommendations are just like that: recommendations. They are not mandatory. Countries have been given options to do what they want with their previous categorizations in amateur radio. Some countries cleverly decided to avoid any conflict in between their 'old' classes and the new-planned ones, by promulgating all previous categories to be fully compliant with the newly-adopted CEPT Class. Some national administrations, such as in Serbia, decided to 'revenge' to their no-Morse hams for 'daring' to avoid learning telegraphy. As said, somewhere in 2011, Serbian regulatory authority

RATEL decided to blindly follow a selfish attitude of SRS (Amateur radio union of Serbia), which had always claimed that domestic no-code class "E" was 'irrelevant' as a ham radio sub-group, despite factual data that proved an increased popularity of that category within the newcomers to the hobby. "The numbers do not lie", says an old adage. The facts of numbers in no-coders were clearly described in (Skoric, 2003). Unfortunately, RATEL accepted suggestions of SRS that the no-Morse class "E" should be recategorized as a 'national' class – and as a result it became restricted from any chance of beeing recognized internationally! In opposite to that, the self-proclaimed 'elites' within SRS and SRV have managed to give themselves (but not to the no-Morse license holders) some extra rights & privileges they had not before, such as shortened 1-letter suffixes in callsigns, as well as some new portions of spectrum, and so on. That all consequently led to widening the gap between the ham groups with highly disproportional privileges among (then actual and would-be) license holders. To be more precise, while the Morse operators have gotten their status and opportunities significantly elevated, the no-coders' privileges were decreased – among the others by eliminating their previous CEPT2-compliant status.

In the past I repeatedly sent emails to RATEL, asking those guys to provide rationale on their strange decisions. Interestingly they totally ignored my first mail, sent on 05/29/2016 03:34 PM, as well as the second one, sent on 06/30/2016 08:19 PM. I never got any response, neither the mails bounced back as undelivered or like. Finally, I re-sent the same inquiry on 02/12/2018 08:37 AM, but this time I mentioned an official law related to the information of public interest, which mandated governmental offices to respond to citizens' inquiries in a timely manner. (By the way, may I comment that ignorance in responding to my first two inquiries says something about Serbian administration's behavior.) Nevertheless, as I re-sent my initial inquiry for the 3rd time (mentioning the law) they finally responded. But how they did so?

3.1 "KISS" ("Keep the Inquirer Simple Stupid")

First of all, they did not want to provide their response by emails, so instead they sent me an email asking for my postal address. Two days later I found in the mailbox a nice envelope featuring RATEL's logo. The letter itself was formally written, stamped and signed by the Agency's director, Mr. Vladica Tintor (PhD).

Nevertheless, I found his comments as plain misrepresenting real facts, or better to say a kind of description on 'virtual reality'. For example, his introductory remarks obviously intended to persuade me that the old "Pravilnik" (Ordinance concerning the Amateur Radio) had regulated that **all** Morse categories (A, B, C, D, and F) were allowed to use HF bands (1.8-29 MHz), while the no-Morse category E was only allowed to use portions of 2-meter and 70-cm bands. According to the Agency's response, the "Program for attending the license test for category E" had required only "elementary knowledge" related to 2-meter and 70-cm bands. However, the director's claim was not true because (the Morse) D-class was restricted to bands **above** 30 MHz (similarly to the E-class).

In his further elaboration, Mr. Tintor said that the new "Pravilnik" (brought to power in 2007) has foreseen only two ham classes: the 1st and the 2nd – both of which without Morse proficiency test. Then he added that categories A, B, C, D, and F (note again: all the Morse ones) were 'translated' into the 1st class because the holders of licenses in those categories were already "familiar with short-wave radio traffic specifics", while the category D was 'translated' into the 1st class because of "demanding program in areas of radio technique and radio communications". (Please note that in the previous sentence Mr. Tintor argued in favor of the D-class *twice*.) Nevertheless, once again the director's claim was not true because (as previously noted) the Morse D-class was restricted to bands **above** 30 MHz (similarly to the E-class). Furthermore, his claim that the old category D had more "demanding technical program" (allegedly compared to the

category E), is totally fabricated because it was very well known that the real facts were quite the opposite! To be precise, the category E have had significantly larger pool of examination questions (including technical ones, of course) – because of the fact that the E class candidates were 'abolished' of any Morse requirements, so the additional pool of (technical) questions had been intentionally tailored to serve as a 'compensation' for the missing Morse test. And we all knew that system very well, and nobody had ever made any complaint about!

Interestingly, Mr. Tintor visibly ignored and avoided to comment my referencing the textbook titled "Priručnik o stručnom osposobljavanju članova Saveza radio-amatera i načinu organizovanja ispita" ("Handbook for educating members of SRS and defining amateur radio examination procedures") written by Djordje Stojanovic YU1KH, published 1995 by SRS in Belgrade. I had purchased a copy of that textbook long time ago. In the book's introduction was very clearly announced that the mentioned publication had received an approval from the Presidency of SRS (Председништво Савеза радио-аматера Србије), No. 02-30-3/5.5.1993., signed by then President, Alexander Antic YU1AA, confirming that the book is used for educating members of SRS in order to "improve their knowledge and to prepare them for amateur radio examinations". Having in mind that Mr. Tintor admitted in his letter that his Agency has made decisions based on recommendations from SRS, it is unclear why he has ignored the facts published in the mentioned course-book – the facts that significantly opposes his own claims! Among the others, the handbook listed examination questions per categories, and made it clear that the no-Morse E-class had more examination questions than the F-class (for example). The book has also confirmed that D-class was restricted to bands **above** 30 MHz.

For those who are not familiar with Serbian infamous practices in 'partial implementation of international standards', let me conclude that RATEL has harmonized domestic regulations only with CEPT documents T/R 61-01 and 61-02, and practically, as we discussed, favored telegraphers & telegraphy.

Interestingly, Mr. Tintor strongly rejected my proposal that Serbia should also 'translate' the existing (no-Morse) E-category licenses (now named as the 2nd class in Serbia) to the "CEPT Novice Radio Amateur License", defined by ECC Recommendation (05) 06 (CEPT Novice Radio Amateur Licence), and by ERC Report 32 (Amateur radio novice examination syllabus and amateur radio novice examination certificate within CEPT and non-CEPT countries). In his colorful letter, Mr. Tintor argued that it is "not possible" to translate domestic 2nd class (i.e. former E-class) to the "CEPT Novice Radio Amateur License" claiming that the "examination program for CEPT Novice class … is much larger … and requires much more quantity of knowledge … when compared to the 2nd i.e. E-class." (Citation translated from Serbian.)

Now I can only say that Mr. Tintor's terminology and claims were not only very cynical but also extremely offensive to the wider public as well, including myself personally (as a long-time E-class license holder). I mean, to some less educated bystander it might (falsely) look as if RATEL (i.e. Serbian administration) is a kind of a 'protector', or maybe even better to say, a 'guardian' of pan-European rules & standards. According to Mr. Tintor's claims, CEPT Novice and Serbian 2nd classes cannot be brought to the same level because such a 'translation' would apparently 'lower the quality level of the standards'. Unfortunately, the reality is quite the opposite. For example, Serbian politicians and administration just pretend to go towards joining the EU, and just pretends to do their best to achieve European standards. We who live in this country witness our politicians' lies on a daily basis. Corrupted bureaucrats and 'rotten' administrative apparatus has occupied the country. Only the corrupted self-proclaimed 'elites' can feel prosperity here. All others can easily be drowned bellow the water – soon or later. Let me give you some more examples: Figure 7 depicts my actual recently-renewed ham

license. You can see that my class is labeled as 2. As mentioned, that category is not CEPT compliant any more. Half a year ago I was kindly invited to participate as a tutorial speaker in a technical conference in Japan. My topics were related to ham data radio modes and their possible usage in educational environment. To perform my planned whole-day lecture, I wanted to make some practical demo. In order to do it legally, I contacted the Japanese ham union JARL and asked for a temporary license, valid for no more than a week. And I sent them a copy of my license (Figure 7).

I was quickly rejected by explaining that Class 2. in my license was not CEPT compliant. And because of that rigid attitude in JARL, I canceled my lecture – even though if I had come to Japan I would have been the only 'ambassador' of my country in that scientific event. You bet, I dared to mention that in my last email to RATEL. Mr. Tintor did not bother to comment.


РЕПУБЛИКА СРБИЈА
РЕГУЛАТОРНА АГЕНЦИЈА ЗА ЕЛЕКТРОНСКЕ КОМУНИКАЦИЈЕ И ПОШТАНСКЕ УСЛУГЕ
REPUBLIC OF SERBIA
REGULATORY AGENCY FOR ELECTRONIC COMMUNICATIONS AND POSTAL SERVICES
РАДИО-АМАТЕРСКА ЛИЦЕНЦА
AMATEUR RADIO LICENCE
Носилац лиценце Licence holder: MIROSLAV ŠKORIĆ
Матични број Personal ID number: 0604963800021
Место Place: Novi Sad
Улица и број Street and No: Narodnog fronta 34
Класа Class: 2.
Важи до Valid until: 15.12.2027.
Позивни знак Call sign: YT7MPB
Број лиценце Licence number: 34520-00114/17
потпис овлашћеног лица
signature of authorized person

Figure 7. Serbian authorities decreased ham radio opportunities for Class 2 licensees.

4. Conclusion

Disregarding constitutional norms is one of the issues we discussed in this study. A sophisticated and antidemocratic 'illiberalism', which is more and more visible in public servants and ham leadership in Serbia, eventually could lead to a continual 'witch hunt' against "agents that serve foreign interests and harm the nation". As I mentioned in my DCC 2003 paper, I felt on my own skin attempts to delegitimize my fight for establishing fair rules & regulatory environment in Serbian ham radio.

Some of you can ask me: Why should we in the USA care about your bad practices in Balkans? Well, you never know whether in your own backyard can happen something what we usually describe here as "a big mom bear who dances in front of your doors". (That old saying means you can never know how easily *my* trouble can travel to *your* direction … until it arrives.) The lack of democracy and prevalent autocratic regimes in many European countries are something we should all think about. "Freedom House" recently reported that the consolidation of democratic institutions in the post-communist

countries of Europe, which occurred in the late 1990s and early 2000s, has now stalled, and in some cases, been reversed (Schenkkan, 2018). In his article, Schenkkan underlined the necessity that "the United States [continue] … the promotion of ... effective governing institutions. … Rather than turning away from its long-standing commitment to democracy, the United States should embrace it and invest in it even more. The answer to the illiberal challenge must not be to walk away, but to step up."

I suppose that American hams enjoy traveling abroad to meet new radio friends as much as I do. In that direction, if we in Serbia (and elsewhere in Balkans) allow ourselves to become incapacitated to confront bad regulatory principles that further restrict our operating privileges, I do not see a bright future for ham data modes including building & upgrading of local APRS infrastructures. That's why I consider DCC 2018 as a fully qualified venue to open quality discussion on some issues I talked about in this study.

At the very end of this paper, I would like to underline that I respect all amateur radio communication modes, including CW. I am not against it and I never was. Furthermore, I respect it as the most traditional and proved one. Unfortunately, my tries to get skills in it have failed long ago. Instead of a 'compensation' for it, I did my best in producing papers, some of which are listed on the right side of this page.

Education and exchange of experience is vital for the prosperity of this hobby. In that direction I invite radio amateurs from the USA to consider joining me in preparing materials for new book chapters, and slides for technical presentations in developing parts of world.

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