



LI-FI TEXNOLOGIYASINING O'ZIGA HOS JIHATLARI

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Hozirgi kunning dolzarb masalalaridan biri simsiz tarmoq tizmlarini to'g'ri tashkil etish, korporativ tarmoqlarni yaratish va uni boshqarishda simsiz tarmoq operatsion tizimlar imkoniyatlarini chuqurroq o'rganishdir. Shu qatorda uning barcha texnologiyalaridan unumli foydalana olish va ularni xayotga tadbiq etish ham bugungi kunimizning asosiy vazifalaridan biri hisoblanadi. Zamonaviy simsiz tarmoq turlari orasida LI-FI texnologiyasi yuqori o'rinda turadi. U to'g'risida so'z yuritsak:

Light Fidelity salbiy ta'sirlardan holi deb aytish mumkin. Mazkur texnologiyadan har qanday svetodiodli manbadan taraladigan yorug'lik yordamida ma'lumotlar uzatishda foydalanilishi mumkin, bu esa inson organizmiga salbiy ta'sirlarning bo'lmasligi bilan uning mobilligini saqlashga imkon beradi. Internetning tezligi bir necha gigabaytga oshiriladi, bunda mazkur texnologiya tarmog'i bilan qamrab olish hududi ham kengayib boradi.

Li-Fi texnologiyasi tamoyili har qanday yorug'lik taratadigan svetodiodli lampochka (chiroq) juda katta tezlikda nur «sochishga» qodir, bu esa yorug'lik modulyatsiyalaridan ma'lumotlar uzatish uchun foydalanishda har qanday manbadan foydalanishga imkon beradi. Bu juda ajoyib yechimdir: uy tarmog'ida va axborot uzatkichlar sifatida oddiy stol lampasidan ham foydalanish mumkin! Uzatkich sifatida shirdagi yorug'lik asboblari hamda yorug'lik manbai vazifasini bajaruvchi turli bezakli jihozlar elementlari — umuman barcha yorug'lik taratuvchi qurilmalar katta samarali bo'lib hisoblanadi! Mobil qurilmalar egalari o'z uylaridagi xonalarning istalgan joyida bemalol mazkur texnologiya bo'yicha foydalanishlari mumkin, axir yorug'lik tarmog'i vositasida doimo uylarimiz charog'on!

Biroq qurilmalardan tarmoqqa qayta ma'lumotlar uzatish ancha qiyin masala ekanligini ta'kidlash zarur. Bunday holatlarda datchiklarni xona devorlari va shirdaga joylashtirish zarurati yuzaga keladi. Li-Fi texnologiyasi uchun qo'shimcha qurilmalar deyarli zarur emas, axir buning uchun allaqachon mavjud bo'lgan: ko'chalardagi oddiy fonarlar, avtomobil faralari, xona yoritkichlaridan ham foydalanish mumkin. Masalan, audiokolonkalar sohasida taniqli ishlab chiqaruvchi Klipsch kompaniyasi 2010-yildayoq



oddiy xona svetodiodli lampalari yordamida musiqiy ma'lumotlarni olishga sazovor bo'ladigan Li-Fi prototiplarini taqdim etgandi.

Shubhasiz, Li-Fi texnologiyasi istiqboli katta. Agar qandaydir shahardagi hiyobonda svetodiodli nurlanish uskunalari o'rnatilgan bo'lsa, barcha uchun Internetga keng kopolosali bepul ulanish imkoni taqdim etilishi mumkin. Li-Fi texnologiyasidan har qanday joyda va istalgan qurilma bilan foydalanish mumkin. Bundan tashqari, an'anaviy, masalan, Li-Fi texnologiyasidan foydalanib, katta shaharlarda ishlash sharoilarida va radioto'lqinlar Li-Fi hududidan tashqarida bo'lganida mobil aloqasini gibridga almashtirilishi ehtimoli ham mavjud. Bu yerda albatta, ko'plab xarajatlar talab etiladi, biroq bunday investitsiyalarning o'rni tezda qoplanadi.

Britaniya Edinburg Universiteti olimlari 2010-yildayoq quvvat manbalari yordamida, xususan, svetodiodli lampalardan foydalanib, ma'lumotlar uzatishga imkon beruvchi Li-Fi texnologiyasini ishlab chiqdilar. Nazariy jihatdan Li-Fi 224 Gbit/s. tezlikda ma'lumotlar uzatishi mumkin, biroq yaqinda mazkur texnologiya yordamida bir soniyada 1 gigabayt tezlikda ma'lumotlar uzatishga ham erishdilar. Hozirgi davrda ommaviy bo'lgan bir soniyada 300 Mbit/s. yoki 30 megabaytgacha tezlikda ma'lumotlar uzatishga imkon beruvchi Wi-Fi 802.11n standartiga solishtirilganda, uning o'tkazish qobiliyati o'nlab marta past ekanligini ko'ramiz. PC World portalida bayon etilishicha, Li-Fi inson ko'ziga ko'rinmaydigan yorug'lik spektrida ma'lumotlar uzatadi, shuningdek, Wi-Fi tarmog'iga nisbatan mazkur texnologiyadan foydalanilganida quvvat samarali sarflanadi. Biroq Li-Fi o'zining asosiy kamchiligiga muvofiq deyarli hech qayerda foydalanilmayapti: yorug'lik devordan va boshqa to'siqlardan o'ta olmaydi, oqibatda Li-Fi dan faqat bir xona miqyosida, masalan, ofisdagina foydalanish maqsadga muvofiq bo'ladi. Muhandislar Wi-Fi dan retranslyatorlaridan foydalanishni, biroq ulardan ko'plab o'rnatishga to'g'ri kelishini ta'kidlamog'dalar.

Shunday bo'lsada, Li-Fi texnologiyasining rivoji ustida ishlash uchun Velmenni, pure Li-Fi va Oledcomm kompaniyalari katta hissa qo'shmoqdalar. Ular ma'lumotlar uzatishning yanada yuqori tezligini rivojlantirishga imkon beruvchi samarali yangi svetodiodli manbalar retranslyatorlarini ishlab chiqarishga intilmoqdalar. Rossiyalik mutaxassislar ishtiroki bilan Li-Fi developerlari Stins Coman kompaniyasi konsortsiumida joriy yil bahordan buyon ma'lumotlar uzatishni 1,25 Gb/s.gacha yetkazishga erishildi. Hozirgi vaqtda foydalanuvchilar hamda optimal texnika ishlab chiqaruvchilariga mos keladigan Li-Fi texnologiyasida ma'lumotlar uzatish standarti ustida ishlamoqdalar. Mutaxassislar fikricha, Li-Fi faol Wi-Fini shu yaqin davrlarda siqib chiqara boshlaydi, bu davrgacha yorug'lik yordamida ma'lumotlar uzatish tezligi radiosignallardan ko'ra 100 marta yuqori bo'ladi. Li-Fining yana bir afzallik jihati: u inson salomatligiga umuman xavfli emas, zararli ta'sir ko'rsatmaydi, Wi-Fining zararli ta'siri esa ko'pchilikka ma'lum.

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