A little bit of History …

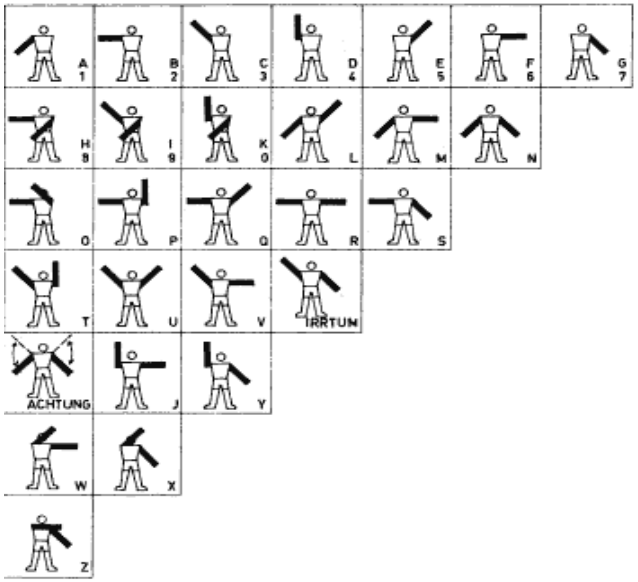
The Origins of Telegraphy

Немного истории…

Происхождение телеграфии

The Semaphor

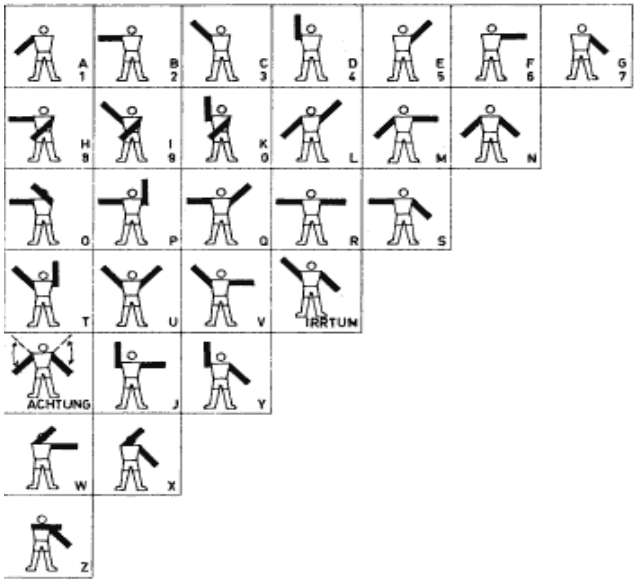
(End of 18th Century)



1 bit per second

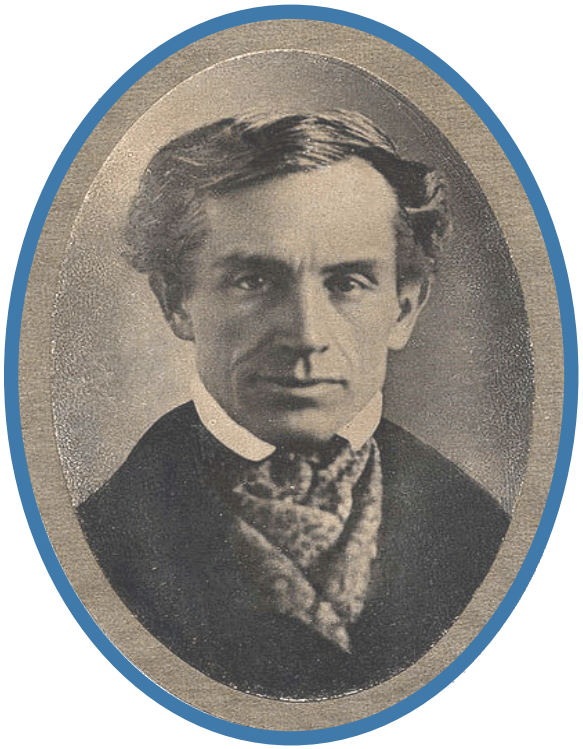
Флажный семафор

(Конец 18 века)



1 бит в секунду

Morse: 5-15 bits per second



Samuel Morse (1791-1872)

• • • • — — — • • — • • — • •

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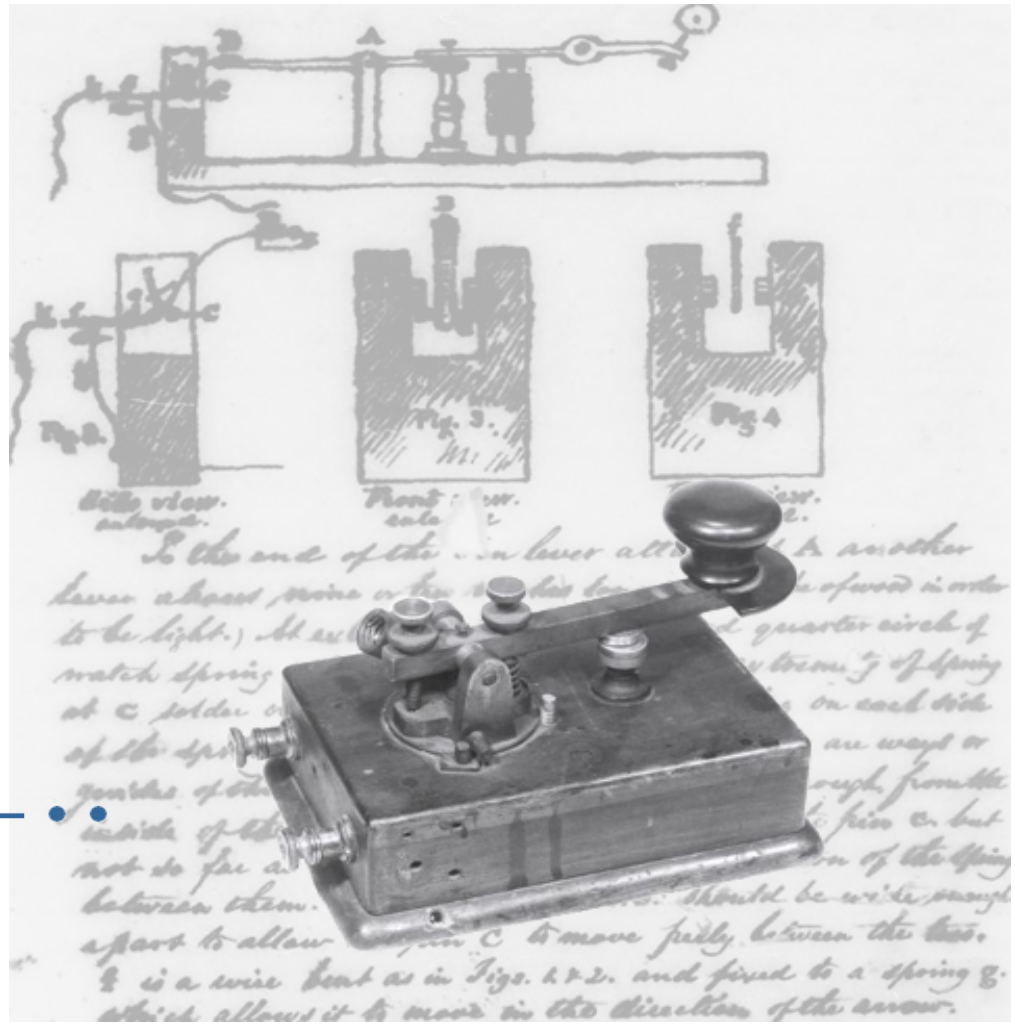
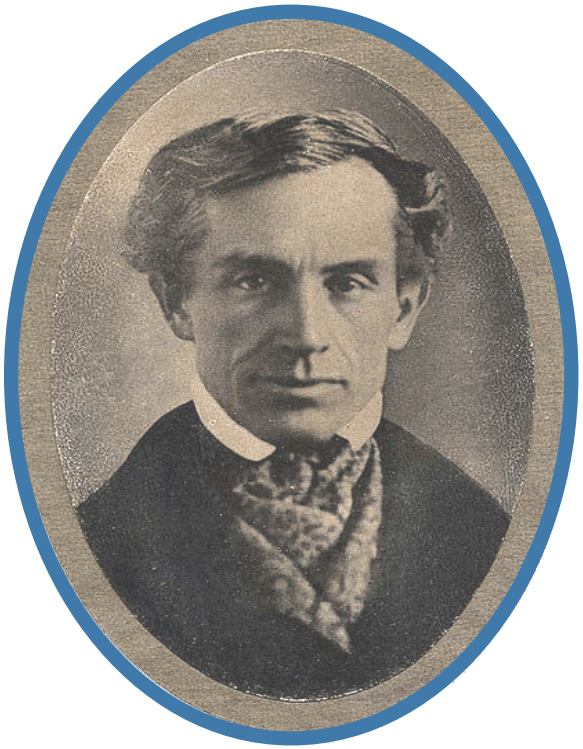


Морзе: 5-15 бит в секунду



Самюэл Морзе (1791-1872)

• • • • — — — • • — • • — • •

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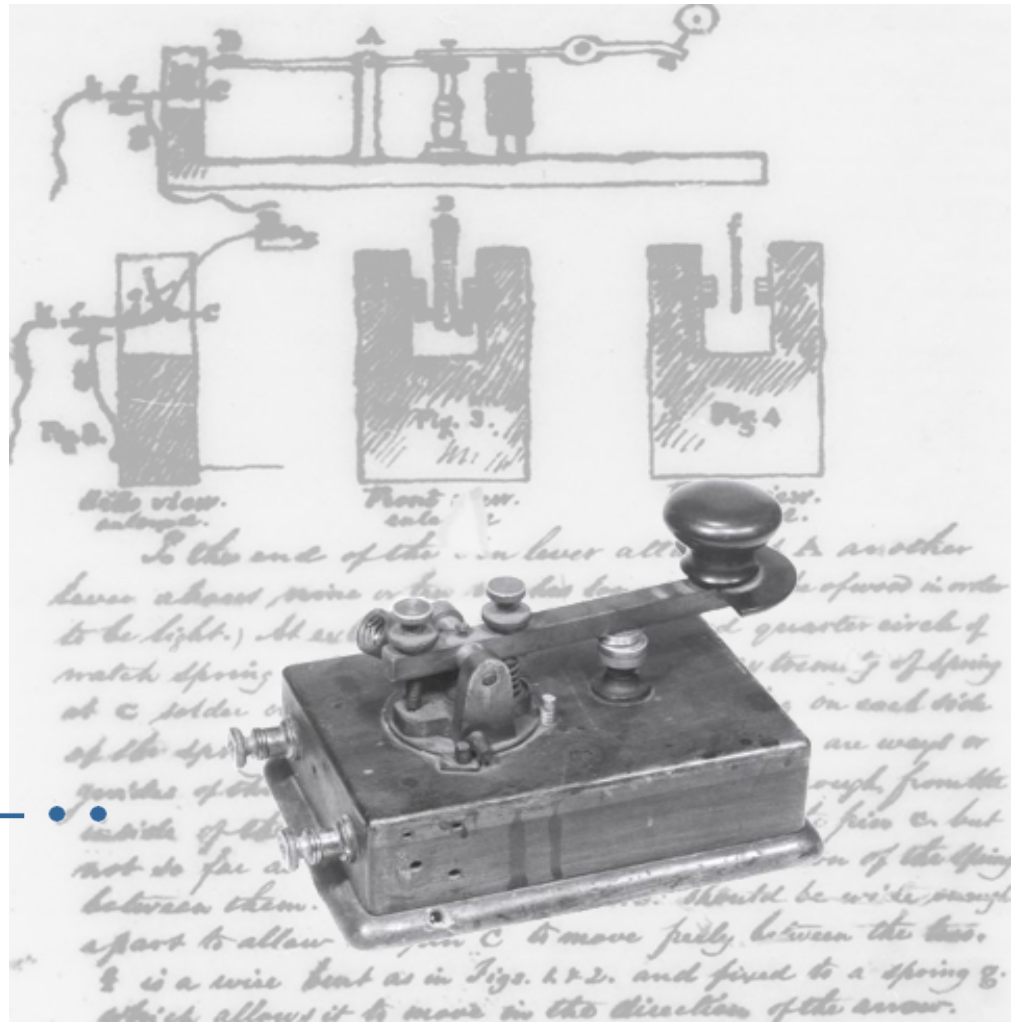
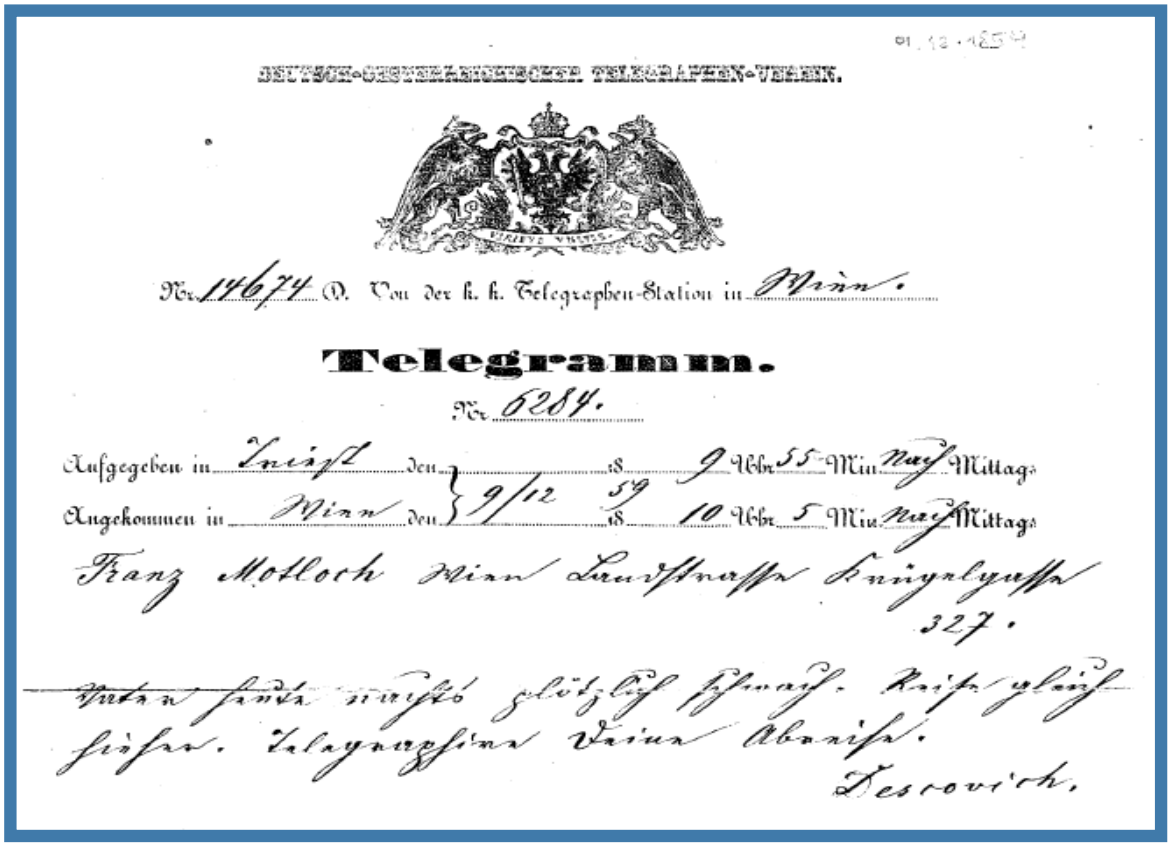


A Telegram dated December 9, 1859



DEUTSCH-ÖSTERREICHISCHER TELEGRAPHEN-VEREIN.

Nr. 14674 D. Von der k. k. Telegraphen-Station in Wien.

Telegramm.

Nr. 6284.

Aufgegeben in Triest den 9/12 59 um 9 Uhr 55 Min. Nach Mittags

Angekommen in Wien den 9/12 59 um 10 Uhr 5 Min. Nach Mittags

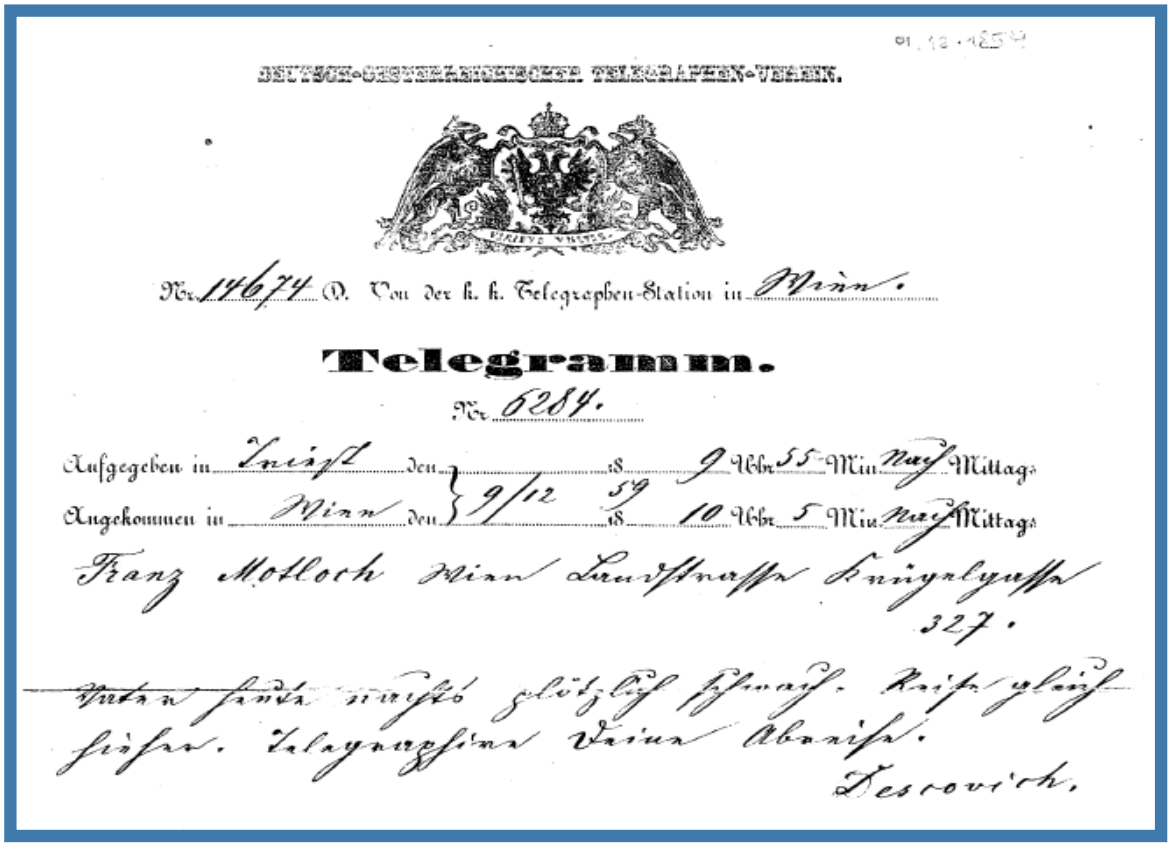
Franz Mottloch Wien Laurenzerstrasse Kaiserhof 327.

Vater heute nacht plötzlich schwach. Reise gleich hieher. Telegraphiren Deine Abreise.

Desrovich.

Father this night suddenly weak. Betake yourself immediately to here. Telegraph your departure.

Телеграмма, датированная 9 декабря 1859 г.



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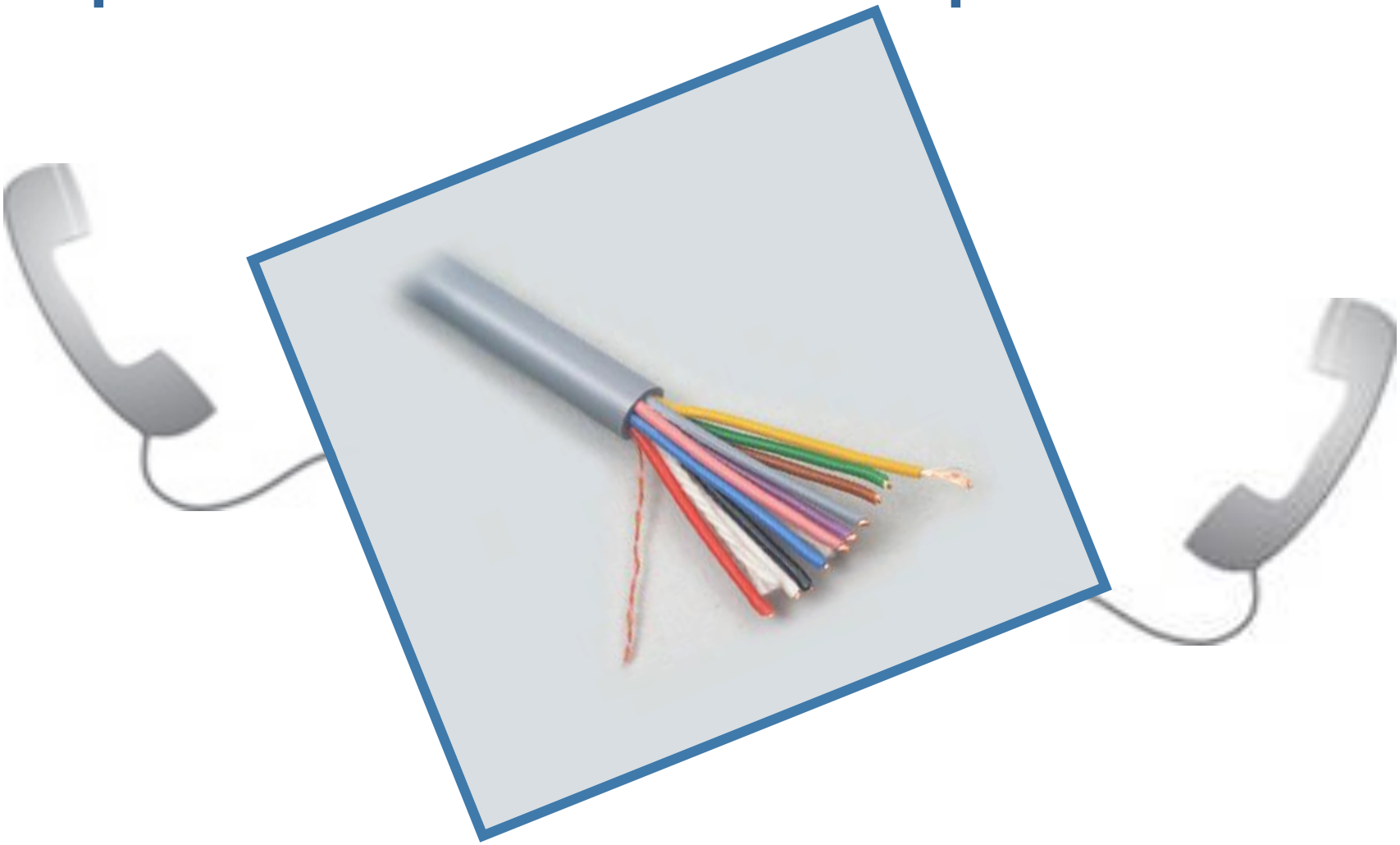
Vater fand nachts plötzlich schwach. Reise gleich hieher. Telegraphire Deine Abreise.

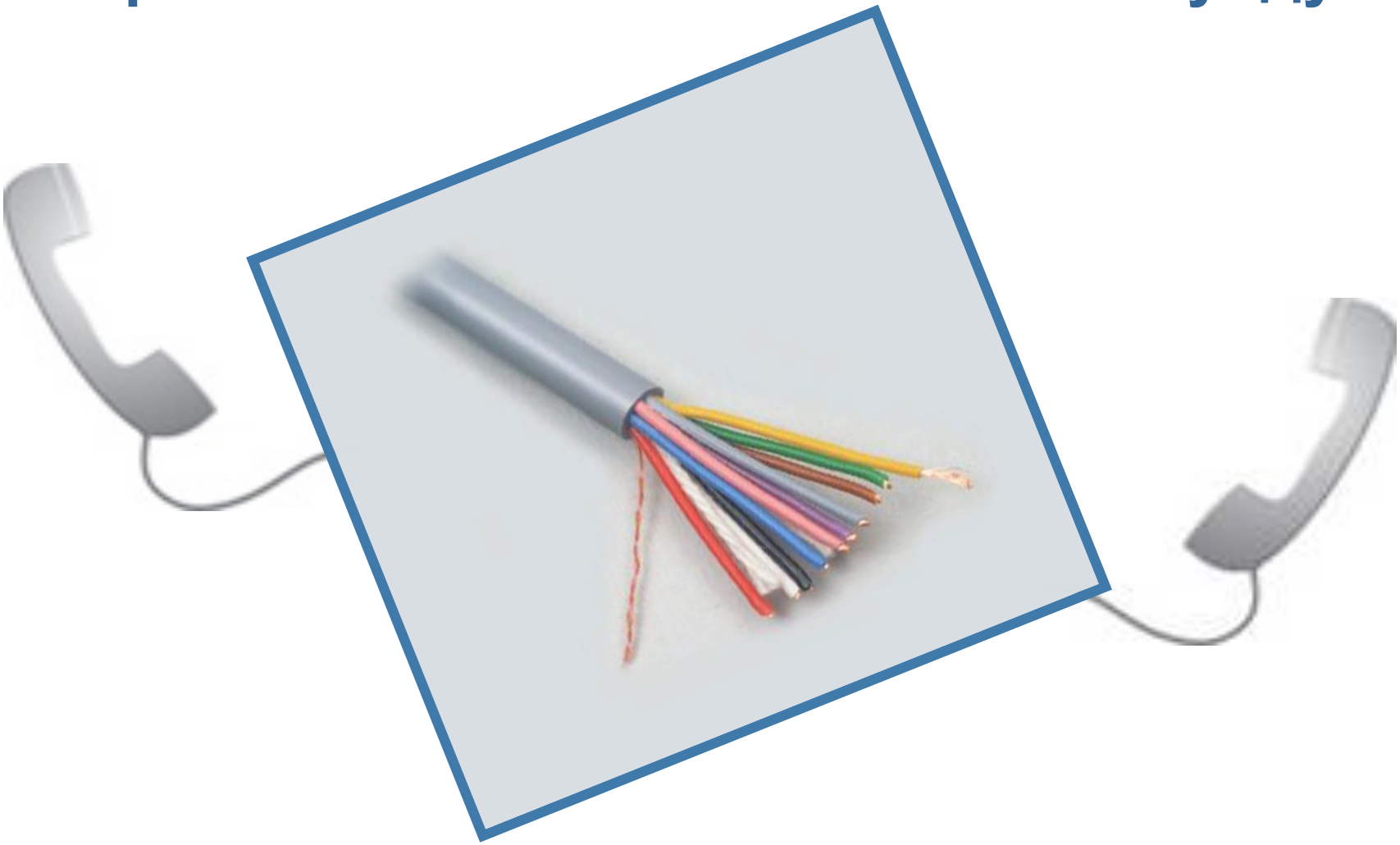
Desrovich.

Этой ночью отцу внезапно стало хуже. Немедленно выезжай. Телеграфируй о своем отъезде.

Telephone Cable: 128.000 bits per second



Телефонный кабель: 128 000 бит в секунду



The Development of Computing

YOU ARE HERE

AND YOU HAVE THE STUFF THAT "THEY" NEED TO MAKE IT WORK

Every 15 years a substantial step

1965: Mainframe

1980: Distributed x86 Computing

1995: Web
- Collaborative
- Mobile
- Dynamic

2010: The Cloud
- Elastic
- Self-provisioning
- Pay per use
- Virtualized
- Simplified

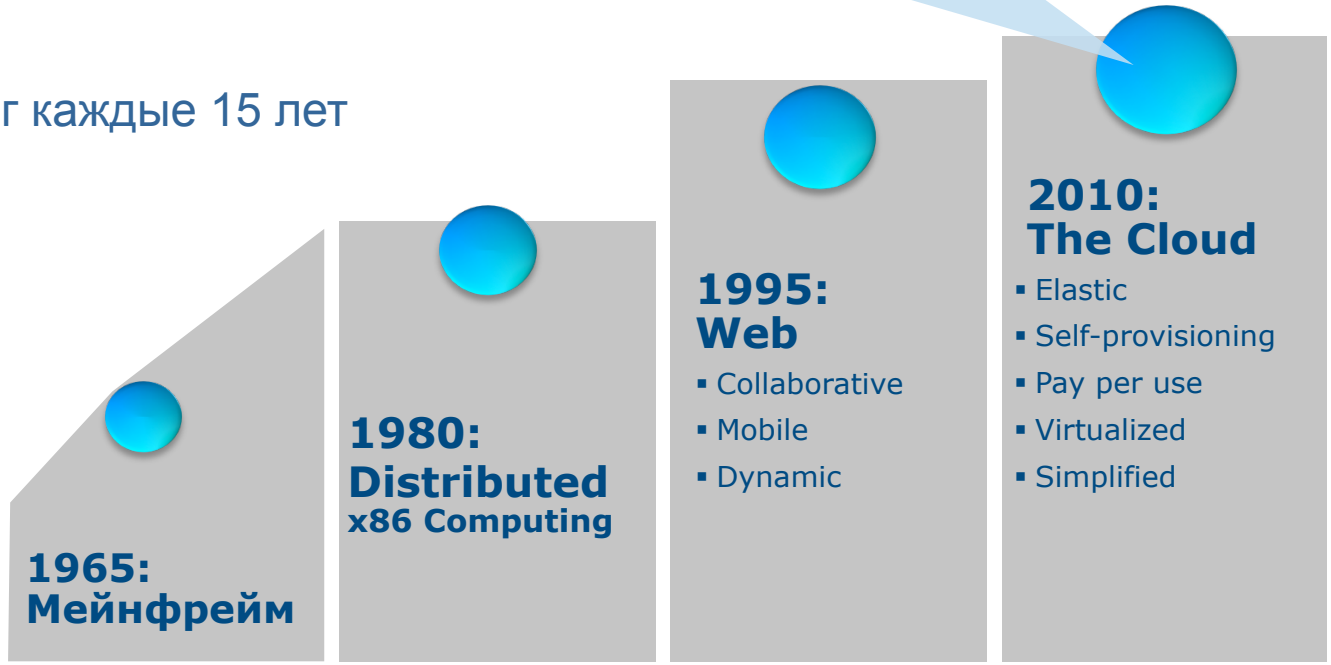
Source: IDC Enterprise Panel, 3Q09, n = 263, September 2009

Развитие вычислительной техники

ВЫ НАХОДИТЕСЬ ЗДЕСЬ

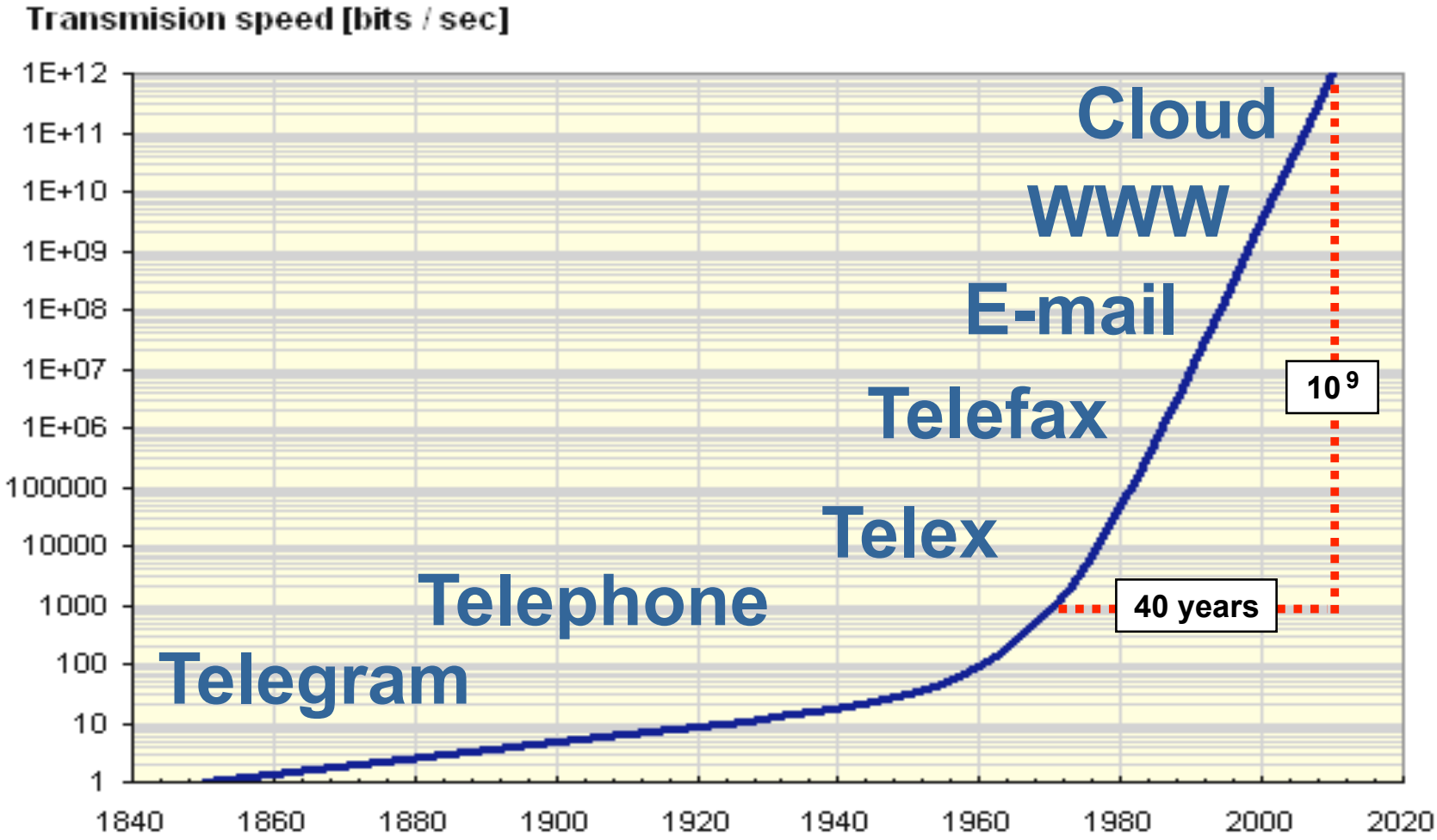
У ВАС ЕСТЬ ТО, ЧТО НУЖНО, ЧТОБЫ ЭТО РАБОТАЛО

Значимый шаг каждые 15 лет

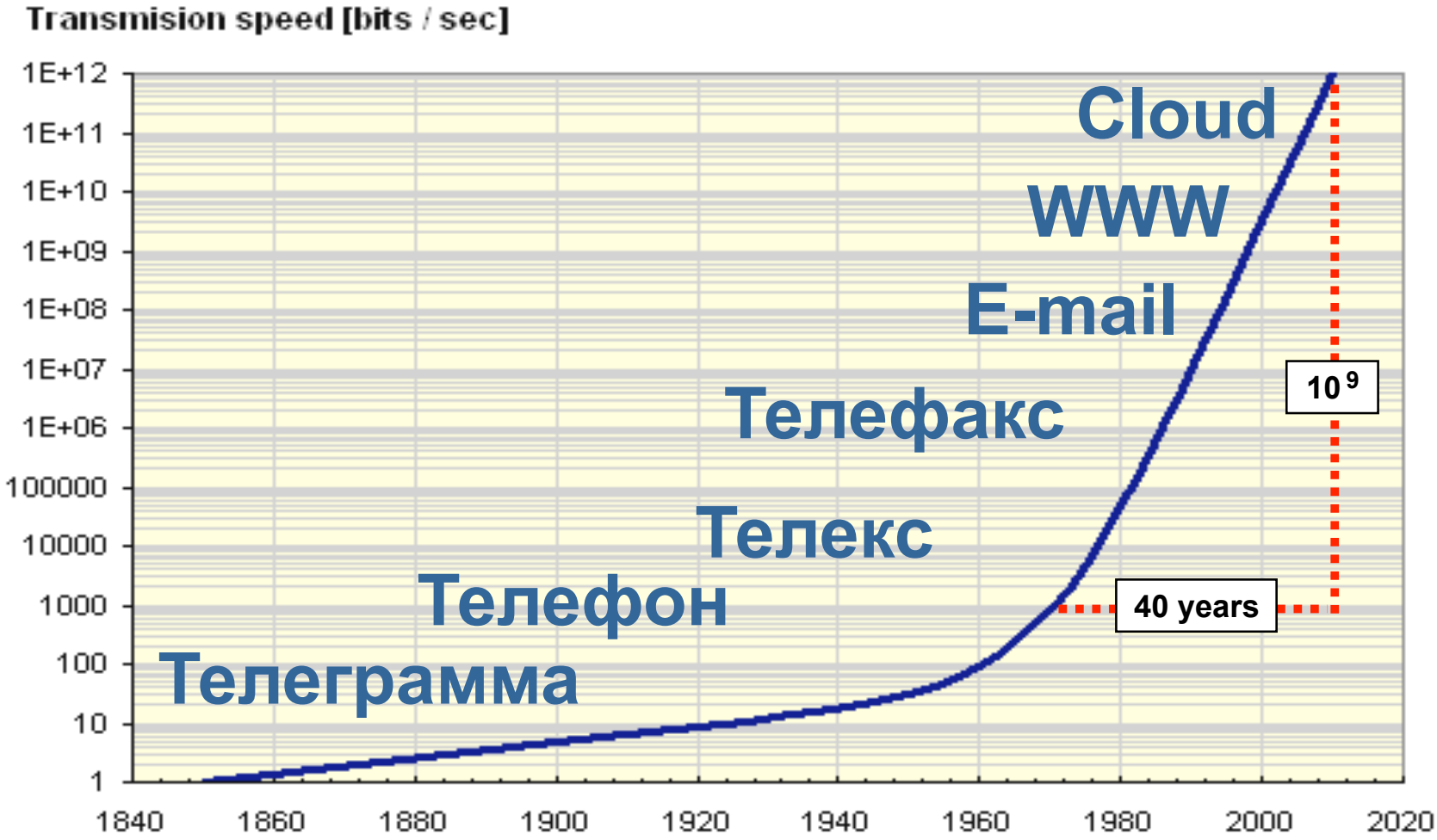


Source: IDC Enterprise Panel, 3Q09, n = 263, September 2009

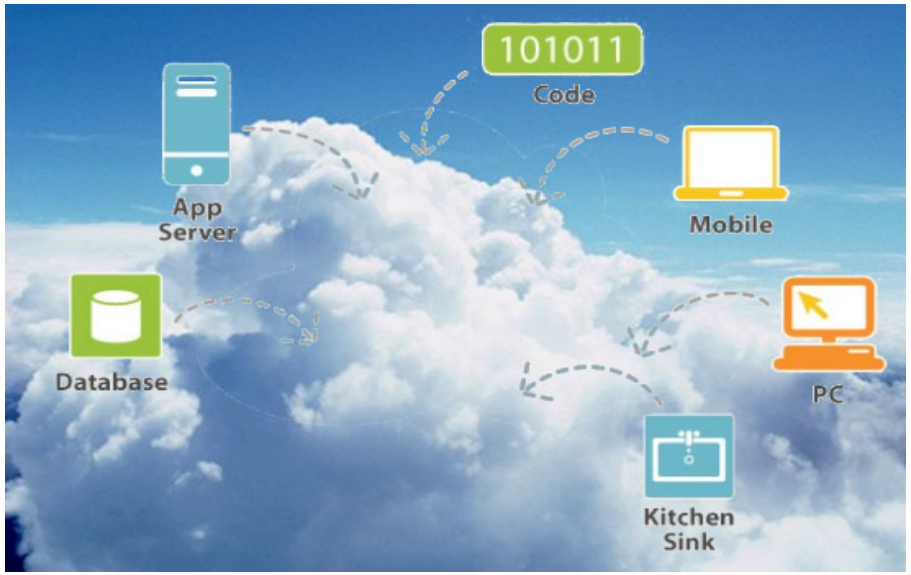
The Development of Telecommunication

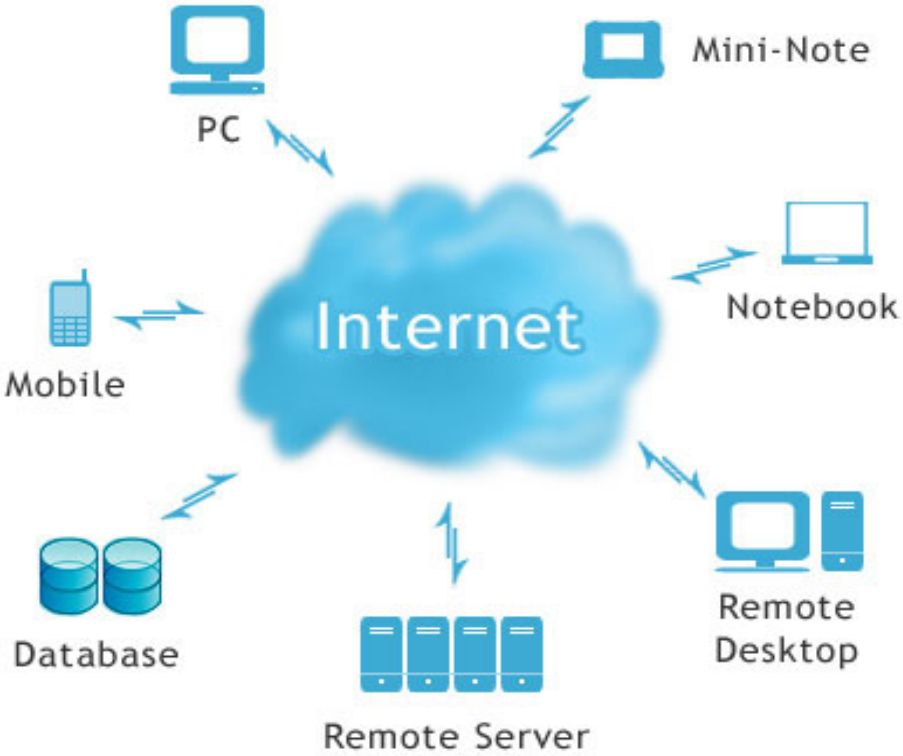


Развитие средств телекоммуникации



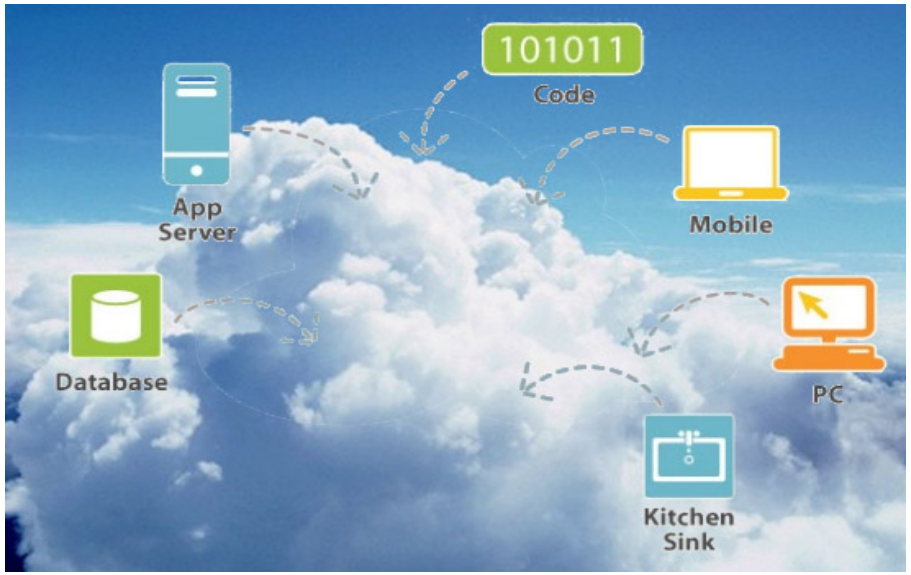
A Look into the Future: Cloud Computing

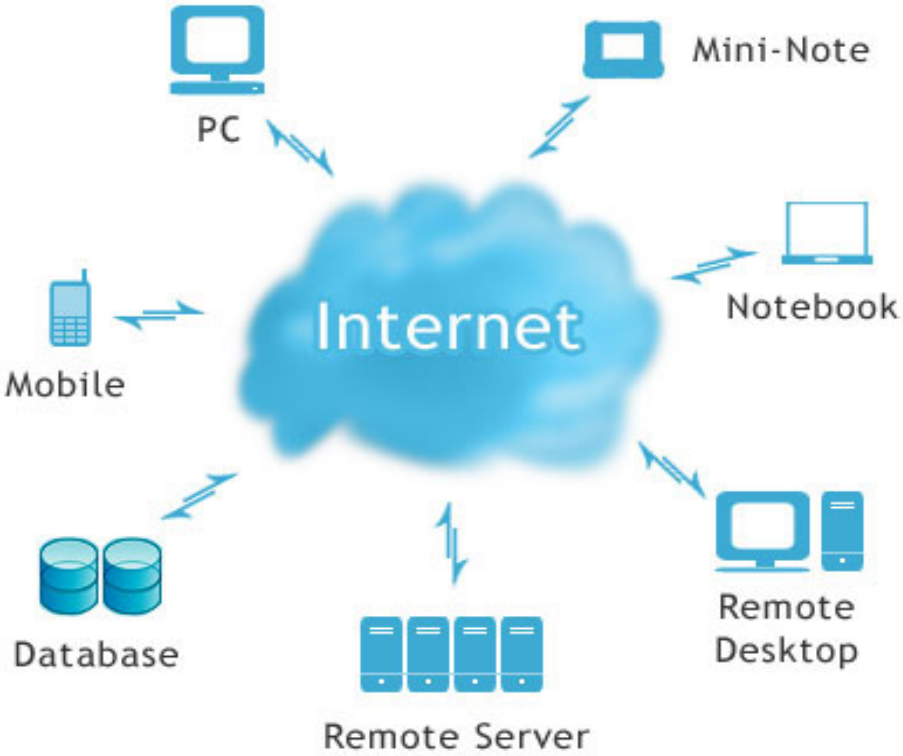




Cloud Computing needs
Tera (10^{12}) bits of Data per second

Взгляд в будущее: Cloud Computing



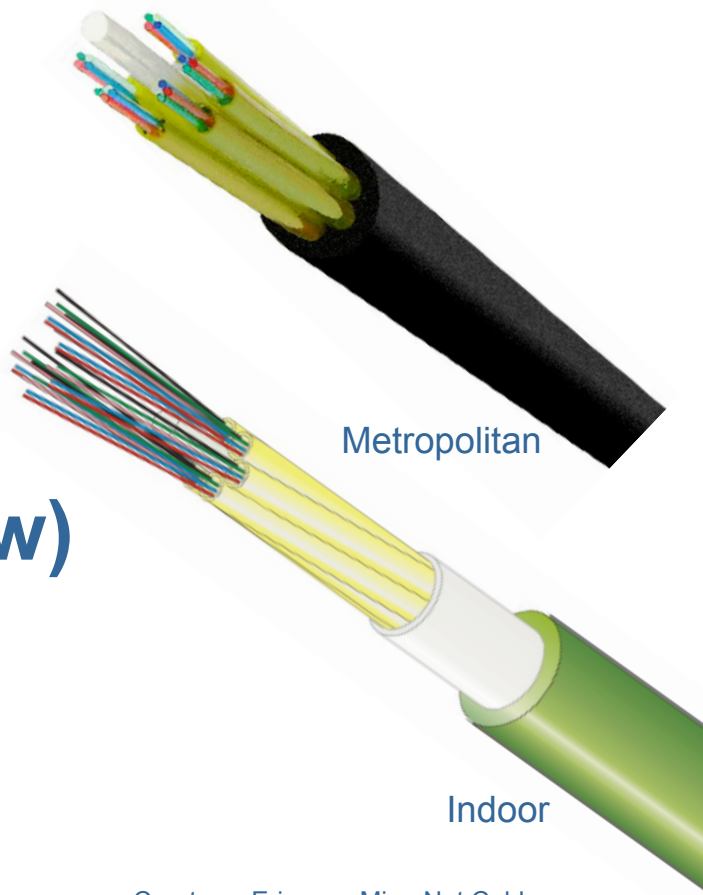


Для Cloud Computing требуются Tera (10^{12}) bits of Data per second

The technology to allow 10^{12} bit/s is the

Fibre Optic Cable

- High data transmision rate
- Insensitive to atmospheric conditions (rain, fog, ice, snow)
- No signal interference

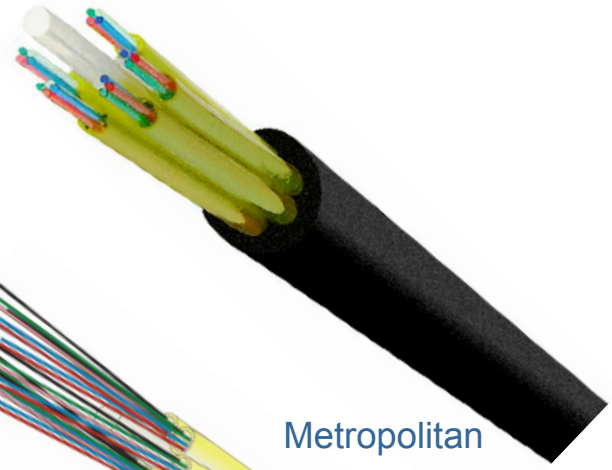


Courtesy: Ericsson-MicroNet Cable

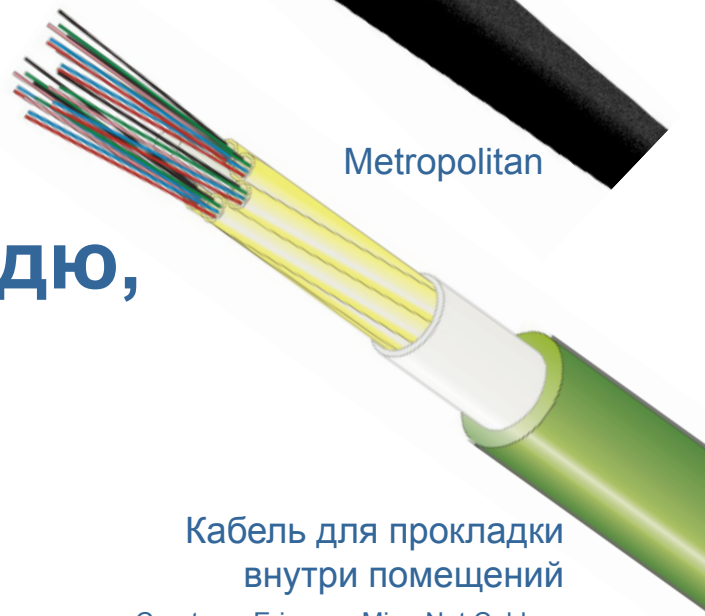
Технология, обеспечивающая 10^{12} бит/с – это

оптический кабель

- Высокая скорость передачи данных
- Нечувствительность к атмосферным условиям (дождю, туману, оледенению, снегу)
- Отсутствие интерференции сигналов



Metropolitan



Кабель для прокладки внутри помещений

Courtesy: Ericsson-MicroNet Cable

Medek & Schörner offers

- Fibre rewinding lines
- Fibre colouring stations
- Tight buffering equipment

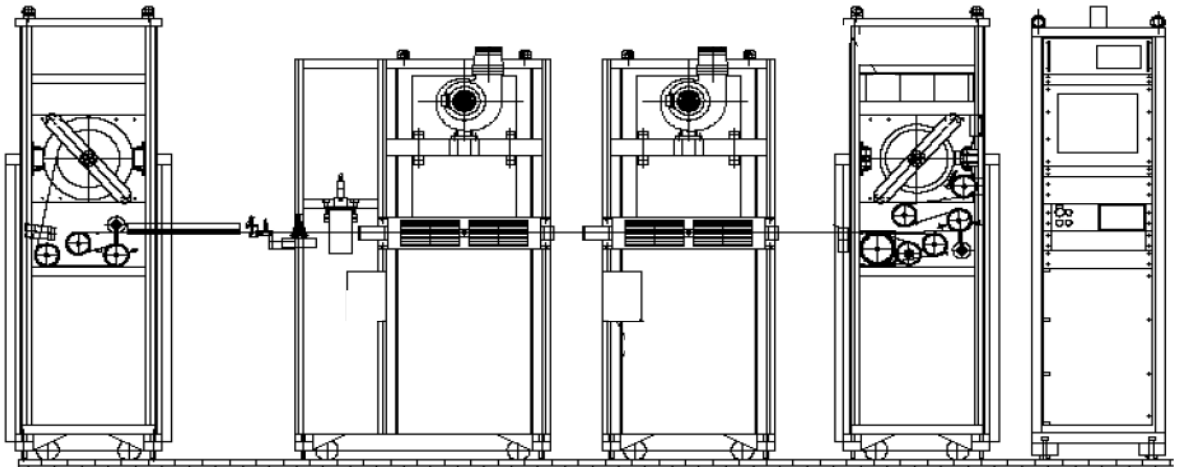
Free combination of elements allows to realize a great variety of custom designed production units

Medek & Schörner предлагает:

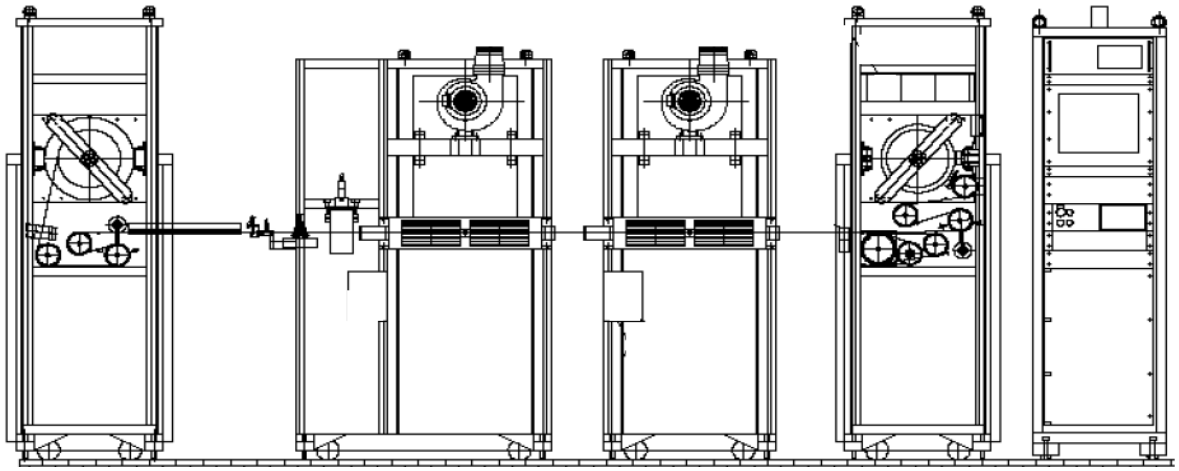
- линии для перемотки ОВ
- станции для окраски ОВ
- оборудование для нанесения плотного буферного покрытия

Свободное комбинирование элементов позволяет реализовать широкий спектр производственных линий под каждого потребителя

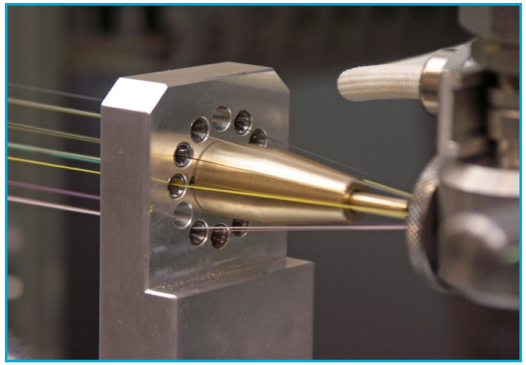
3000 m/min Fibre Colouring

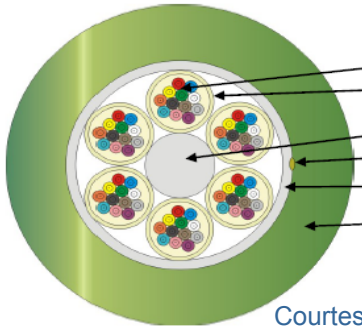


Окраска волокна со скоростью 3000 м/мин



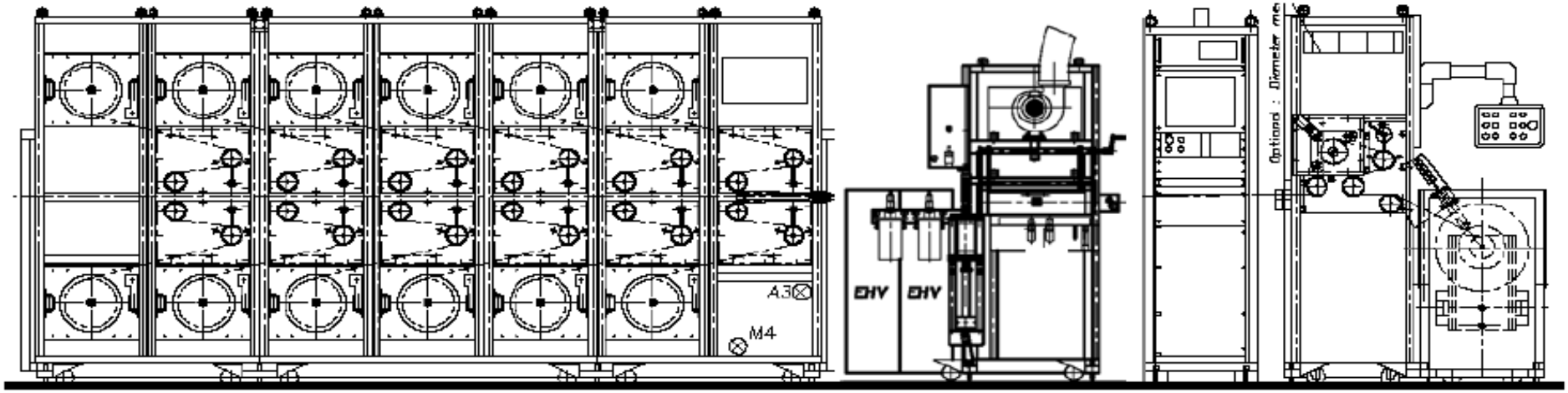
12-fibre Ribbon or CFU Tight Buffering



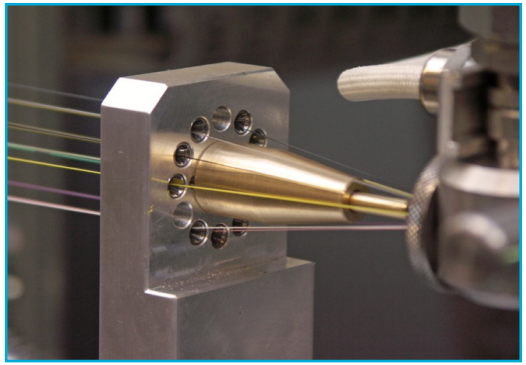


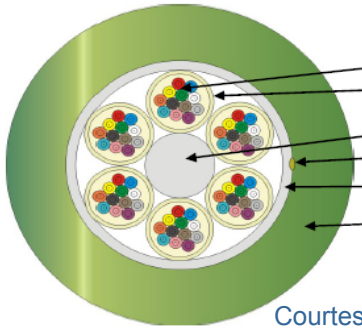
1 Primary coated fiber .....Silica, acrylate
2 Secondary coating (CFU) ....Acrylate
3 Central strength member .....Glass fiber reinforced plastic
4 Slit up yarn .....Aramid yarn
5 Water blocking.....Swellable tape
6 Sheath .....Polyethylene, (HFFR-PE) Green

Courtesy: Ericsson-MicroNet Cable



Волоконно-оптическая лента из 12 волокон или компактный волоконно-оптический блок (CFU)





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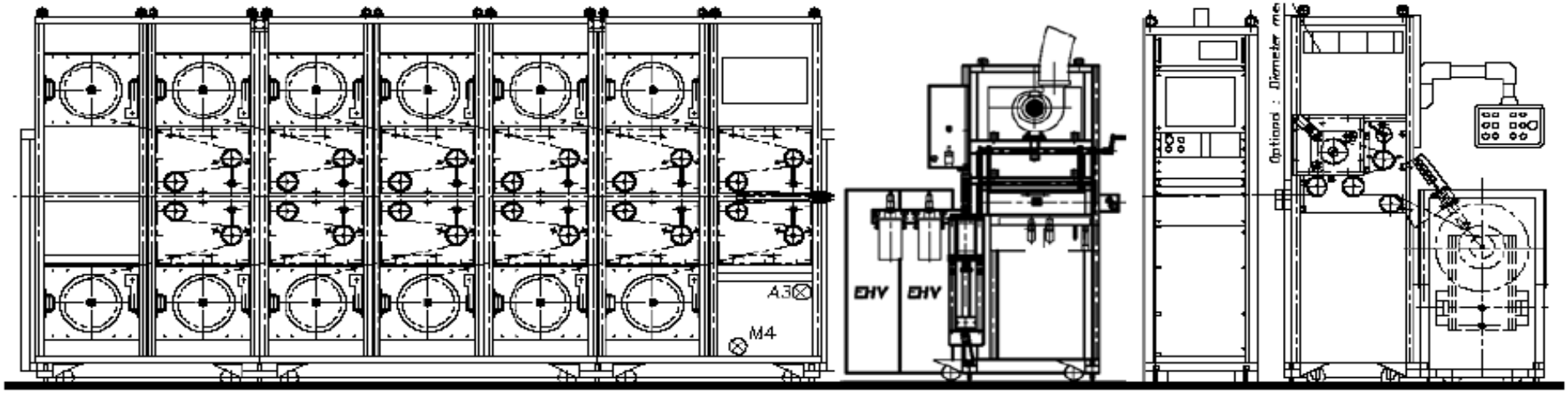
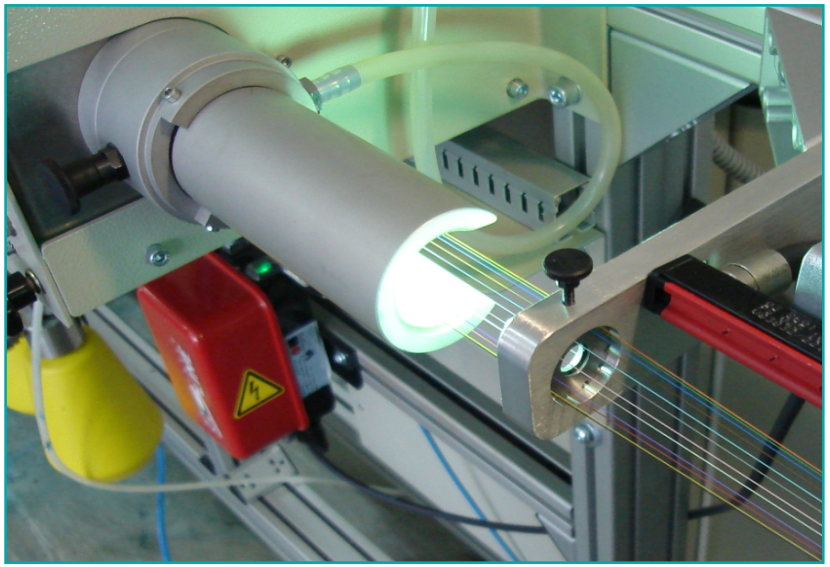
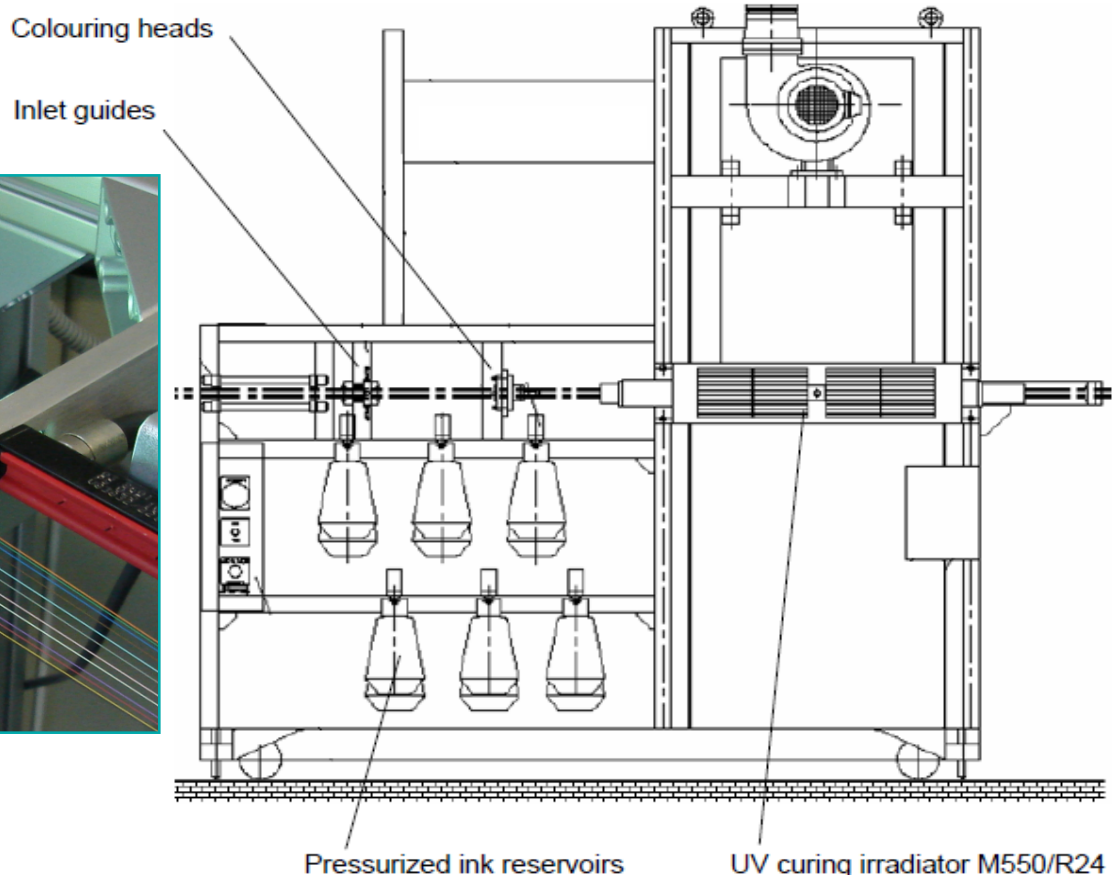
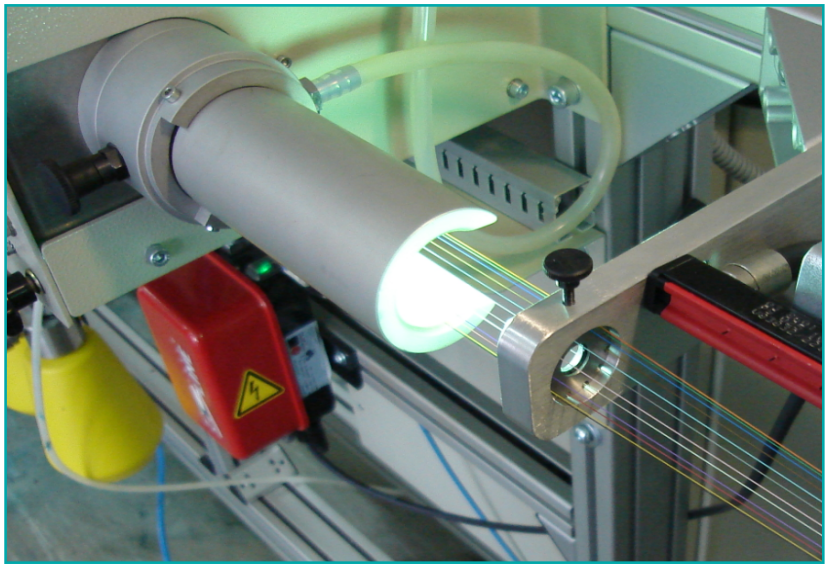


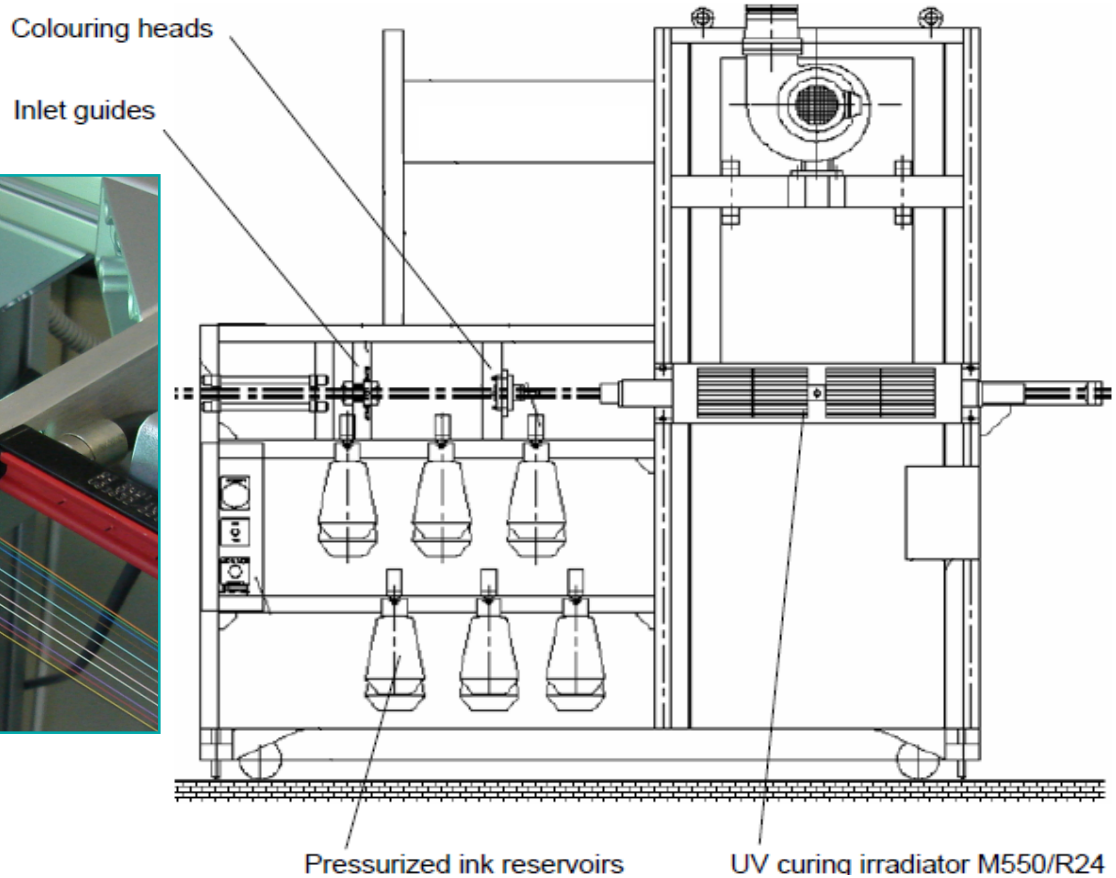
12-fibre in-line colouring





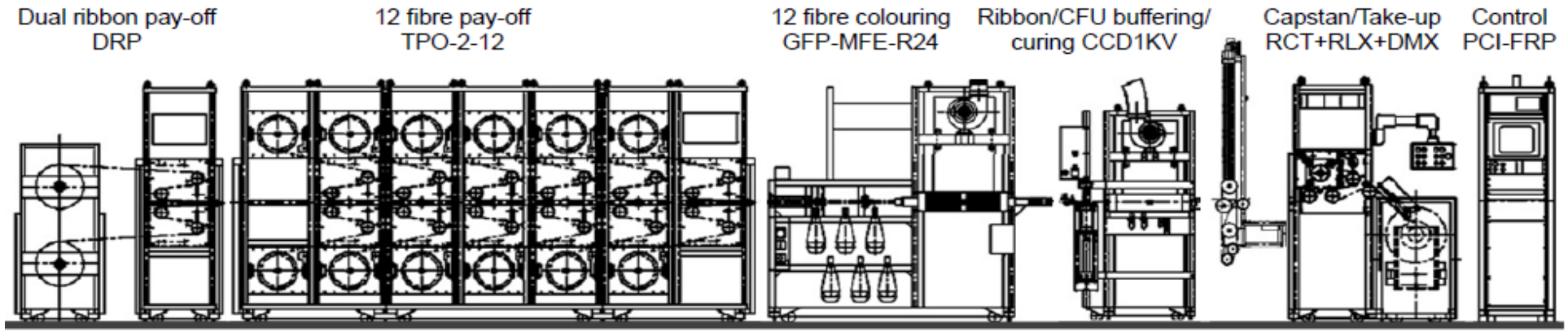
Окраска 12 волокон в линии





Combining:

- 12-fibre / Dual Ribbon Pay-off
- 12-fibre Colouring Station
- Ribbon or CFU Tight Buffering
- Relaxation to minimize attenuation
- Take-up for big bobbins



В составе линии:

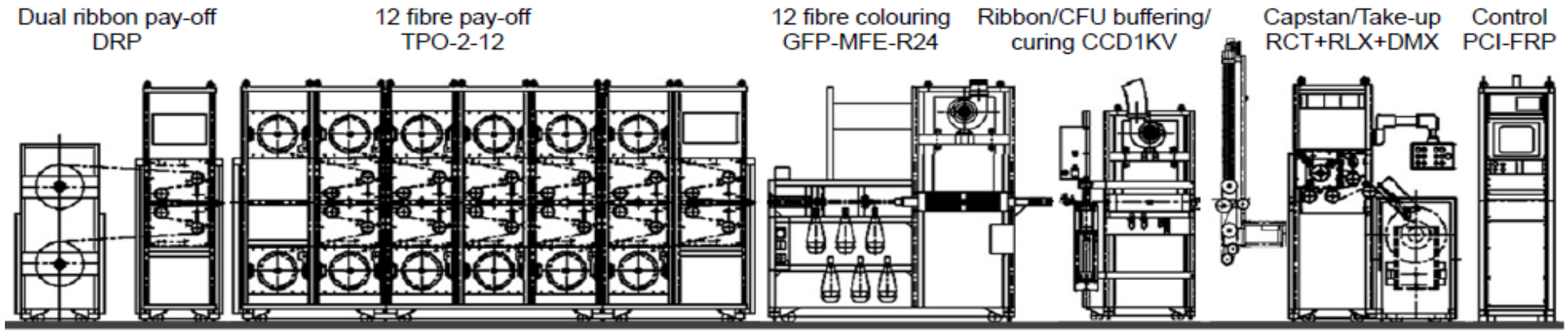
- Отдающее устройство для 12 волокон / волоконной ленты

- Станция окраски на 12 волокон

- Установка для нанесения плотного буферного покрытия для производства лент или компактных волок-оптич. блоков

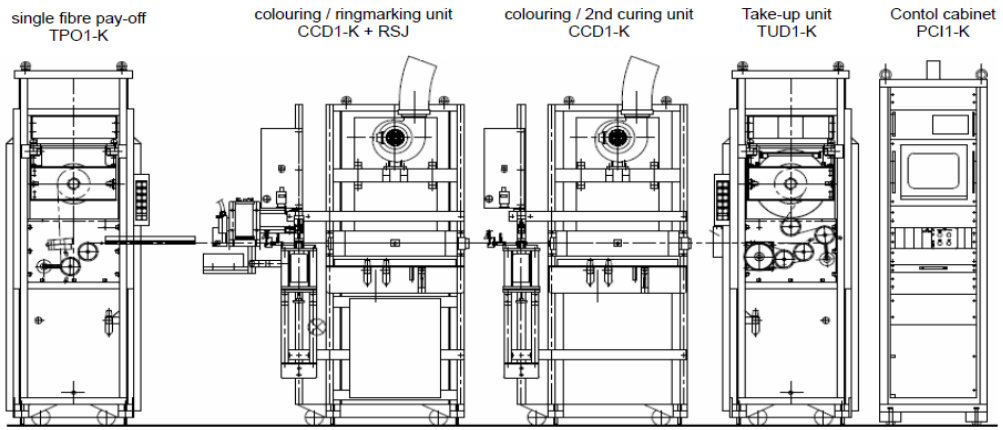
- Релаксационный аккумулятор для уменьшения затухания

- Приемное устройство для больших катушек

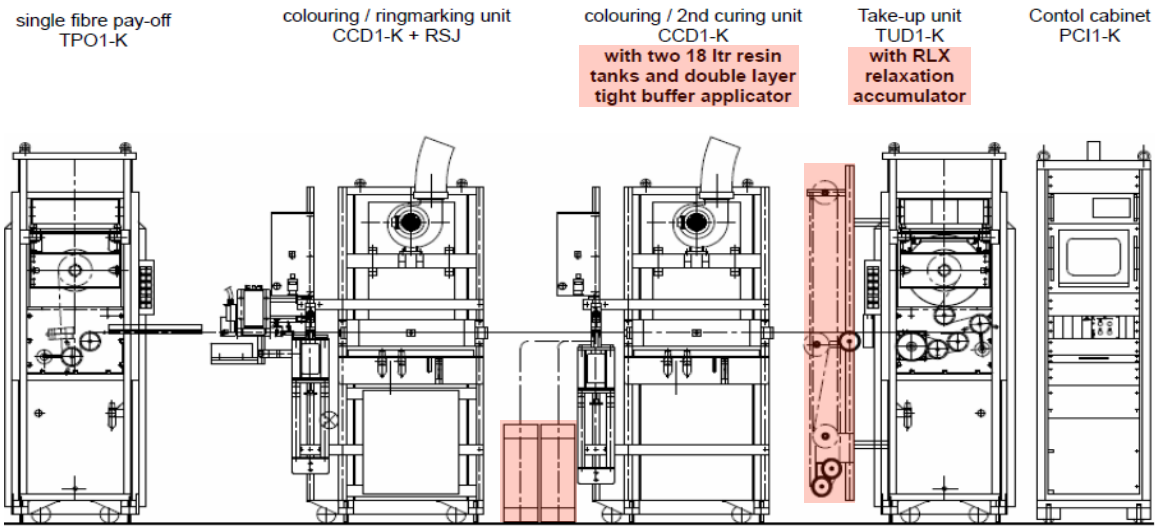


Easy Upgrade of Existing Equipment

Single fibre colouring …

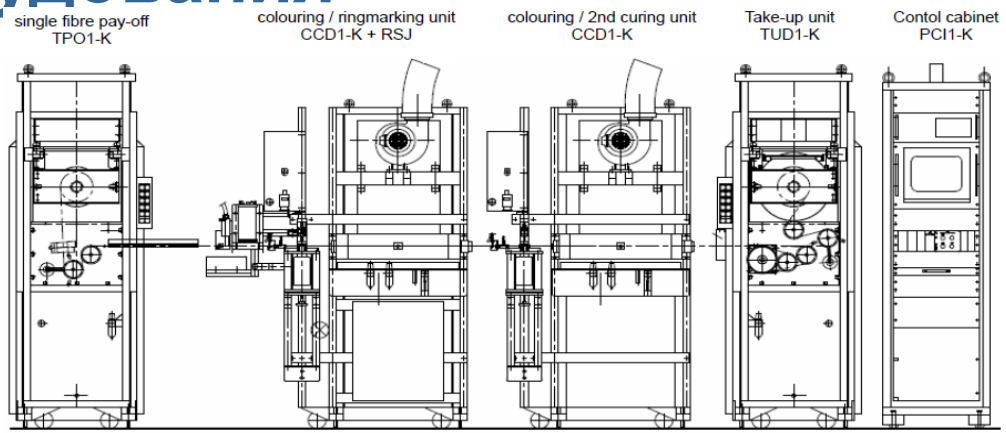


… to tight buffering

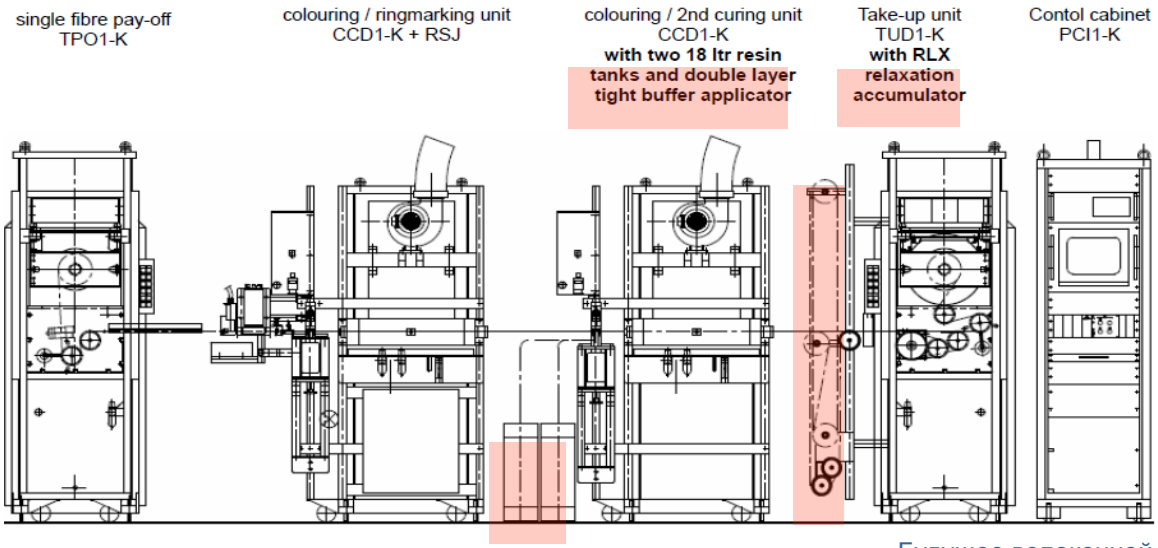


Легкость модернизации существующего оборудования

От окраски одного волокна …



… до нанесения плотного буфера



Many thanks for your attention

Большое спасибо за внимание