



МЭК
61784-3—
2015

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(IEC 61784-3:2010, IDT)



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1 « - « « 4 » - , 58 « »

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3 IEC 61784-3:2010 «

4 3. » (Industrial communication networks — Profiles — Part 3: Functional safety fieldbuses — General rules and profile definition. IDT). IEC 65 .

5 1.0-2012 (8). (1 - », () - « ».

(www.gost.ru)

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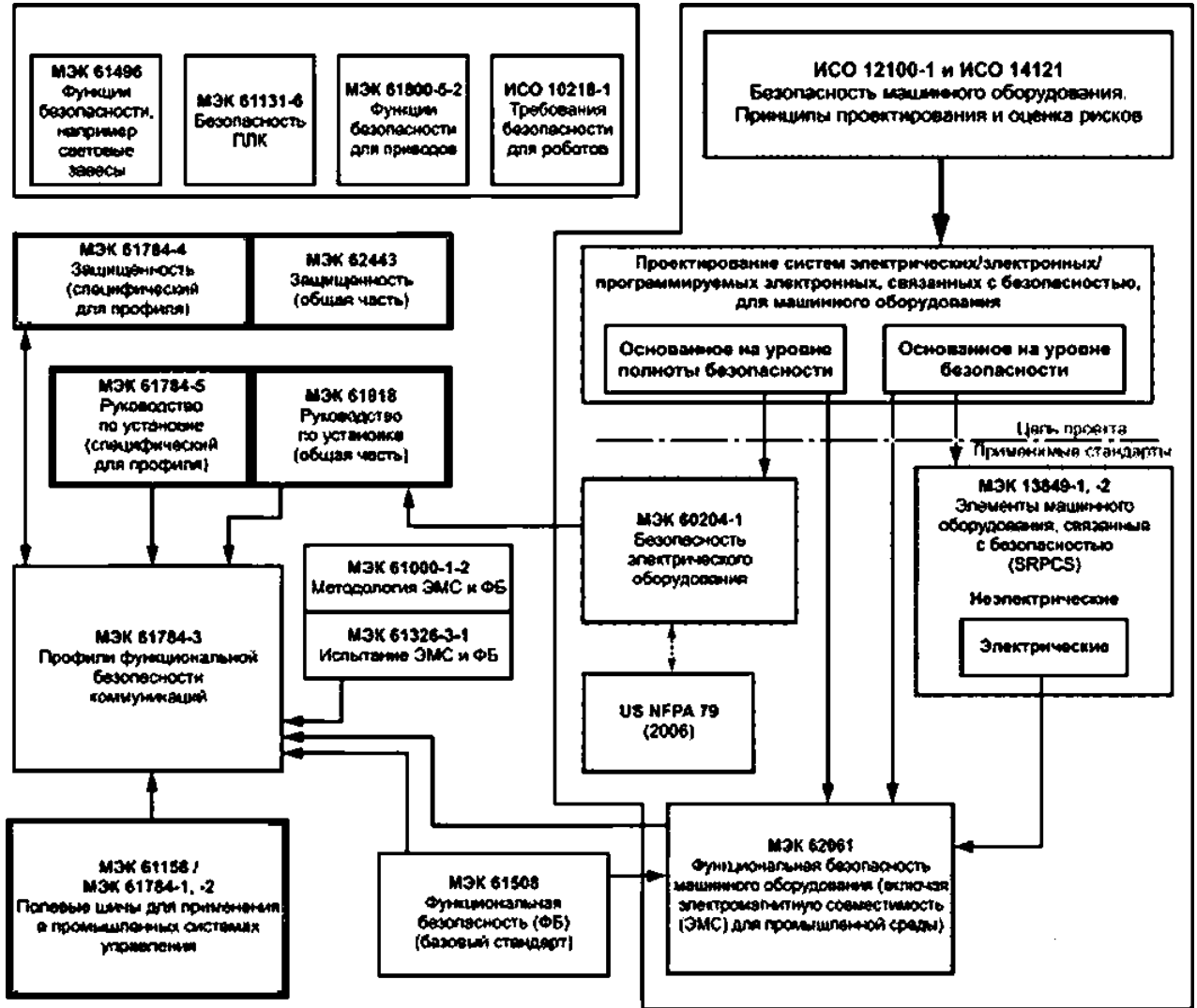
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Industrial communications networks. Profiles. Part 3. Functional safety fieldbuses. General rules and profile definitions

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- IEC 61131*2. Programmable controllers — Part 2: Equipment requirements and tests (61131*2
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- IEC 61156 (all parts) Digital data communications for measurement and control — Fieldbus for use in in*
dustrial control systems (61158 ())
- IEC 61326*3*1. Electrical equipment for measurement, control and laboratory use — EMC require-
ments — Part 3*1: Immunity requirements for safety-related systems and for equipment intended to perform
safety-related functions (functional safety) — General industrial applications (61326*3*1 -
3-1. -
())
- IEC 61326-3-2, Electrical equipment for measurement, control and laboratory use — EMC require-
ments — Part 3-2: Immunity requirements for safety-related systems and for equipment intended to perform
safety-related functions (functional safety) — Industrial applications with specified electromagnetic environment
(61326-3-2 -
3-2. -
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- IEC 61508 (all parts), Functional safety of electrical/electronic/programmable electronic safety-related
systems (61508 () / / -
- IEC 61508-1:2010. Functional safety of electrical/electronic /programmable electronic safety related sys-
tems» Part 1: General requirements (61508-1:2010 -
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- IEC 61508-2. Functional safety of electrical/electronic/programmable electronic safety-related sys-
tems — Part 2: Requirements for electrical/electronic/programmable electronic safety related systems
(61508-2 / /
2.)
- IEC 61784-1. Industrial communication networks — Profiles — Part 1: Fieldbus profiles (61784-1
1.)
- IEC 61784-2. Industrial communication networks — Profiles — Part 2: Additional fieldbus profiles for
real-time networks based on / 8802-3 (61784-2 2.
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- IEC 61784-3-1. Industrial communication networks — Profiles — Part 3-1: Functional safety fieldbus-
es — Additional specifications for CPF 1 (61784-3-1 3-1. -
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- IEC 61784-3*2. Industrial communication networks — Profiles — Part 3-2: Functional safety fieldbus-
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- IEC 61784-3-3. Industrial communication networks — Profiles — Part 3-3: Functional safety fieldbus-
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- IEC 61784-3-6. Industrial communication networks — Profiles — Part 3-6: Functional safety fieldbus-
es — Additional specifications for CPF 6 (61784-3-6 3*6. -
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- IEC 61784-3-8. Industrial communication networks — Profiles — Part 3-8: Functional safety fieldbus-
es — Additional specifications for CPF 8 (61784-3-8 3-8. -
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- IEC 61784-3-12. Industrial communication networks — Profiles — Part 3-12: Functional safety fieldbus-
es — Additional specifications for CPF 12 (61784-3-12 3*12.
CPF 12)
- IEC 61784-3*13. Industrial communication networks — Profiles — Part 3-13: Functional safety fieldbus-
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- IEC 61784-3-14. Industrial communication networks — Profiles — Part 3-14: Functional safety fieldbus-
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CPF 14)

IEC 61784-5 (all parts). Industrial communication networks — Profiles — Part 5: Installation of fieldbuses — Installation profiles for CPF X (61784-5 ()) 5.
CPF X)

IEC 61918, Industrial communication networks — Installation of communication networks in industrial premises (61918)

IEC 62280-1:2002, Railway applications — Communication, signalling and processing systems — Part 1: Safety-related communication in closed transmission systems (62280-1:2002) 2.

IEC 62443 (all parts). Industrial communication networks — Network and system security (62443 ())

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3.1.1

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(absolute time stamp):

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3.1.1.2

(availability):

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(black channel):

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3.1.1.4

(bridge):

3.1.1.5

(communication channel):

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(communication system):

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3.1.1.7

(connection):

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(Cyclic Redundancy Check. CRC):

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(error):

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3.1.1.11

(failure):

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[61508*4:2010.] (/ 2382*14.01.11.)

3.1.1.12

(fault):

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[61508*4:2010.] (/ 2382*14.01.10.)

3.1.1.13 (fieldbus):

3.1.1.14 (fieldbus system): *

3.1.1.15 (frame): DLPPDU (-

3.1.1.16 (frame check sequence. FCS): DLPOU () *

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(hash function): () () (-

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3.1.1.18 (hazard): , , -

3.1.1.19 (master): , ,

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(message): , -

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 30 . 42.4 60 8 -
 , — PELV SELV
 (61131-2)

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 — 61506-4 , !
 [61508-4:2010.] (/ 2382-14.01.12.)

3.1.1.27 (relative time stamp): , -
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 3 (MTBF) — (MTTF) -
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3.1.1.29

(risk):

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[61508-4:2010], [/ 51:1999. 3.2]

3.1.1.30

(safety communication layer. SCL):

3.1.1.31

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(safety connection):

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(safety data):

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(safety device):

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3.1.1.34

(safety extra-low-voltage. SELV):

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3.1.1.35

(safety function):

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3.1.1.36

(safety function response time):

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3.1.1.37

(safety integrity level SIL):

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- 3.1.1.38 (safety measure): 61508. -
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- 3.1.1.39 (safety-related application): 61508. -
- 3.1.1.40 (safety-related system): 61508.
- 3.1.1.41 (slave):
- 3.1.1.42 (spurious trip): -
- 3.1.1.43 (time stamp):
- 3.1.1.44 (white channel): -
- 61508.
- 3.1.2 CPF 1.
- 3.1.3 CPF 2.
- 3.1.4 CPF 3.
- 3.1.5 CPF 6.
- 3.1.6 CPF 8.
- 3.1.7 CPF 12.
- 3.1.8 CPF 13.
- 3.1.9 CPF 14.
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- 3.2.1

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FAL	(Fieldbus Application Layer)	[51158-5]
FCS		

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FSCP		
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PELV		
PES		[61508-4:2010]
PFD		[61508-6:2010]
PFH	(h ¹)	[61508-6:2010]
PhL		[/ 7498-1]
PL		[13849-1]
PLC		
SCL		
SELV		
		[61508-4:2010]
SR		

- 3.2.2 CPF 1.
SIS — (safety instrumented systems).
- 3.2.3 CPF 2.
CIPT[™] — [Common Industrial Protocol (application framework shared among CPF 2 communication profiles)].
- 3.2.4 CPF 3.
DP — (Decentralized Peripherals).
- 3.2.5 CPF 6.
- 3.2.6 CPF 8.
ASE — (Application Service Element);
SASE — (Safety Application Service Element).
- 3.2.7 CPF 12.
FSoE — no CPF 12.
- 3.2.8 CPF 13.
- 3.2.9 CPF 14.
IP — (Internet Protocol);
UDP — (User Datagram Protocol).

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 (FSCP), 61784-3;20
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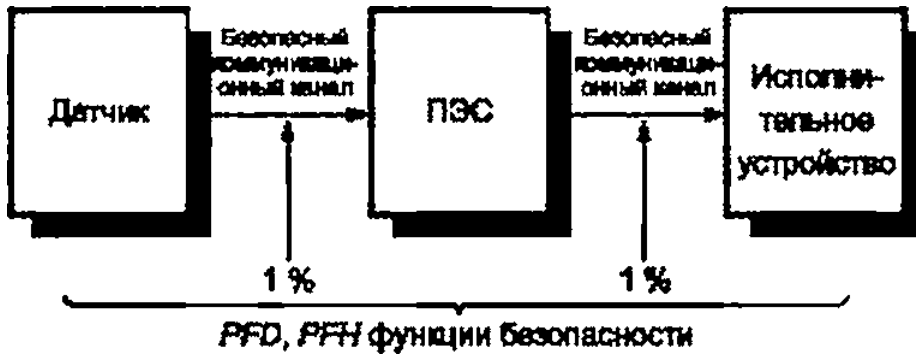
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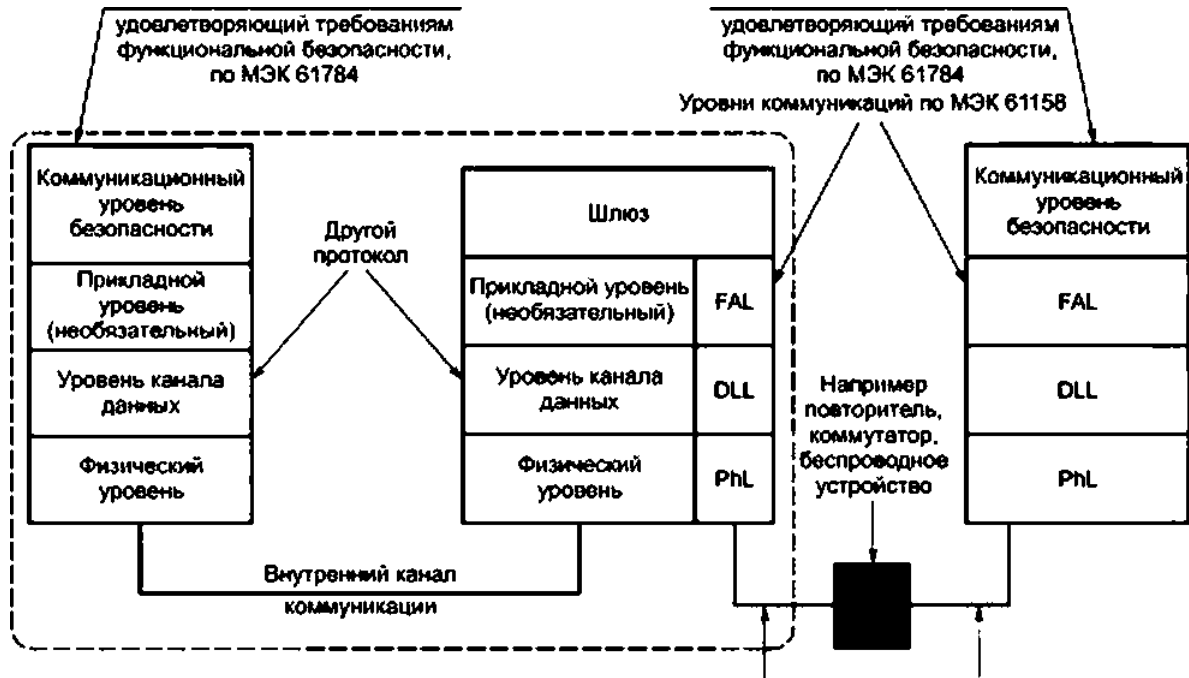
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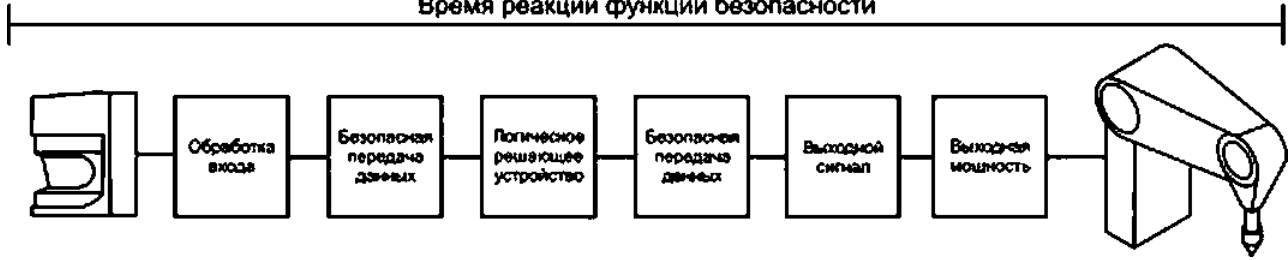
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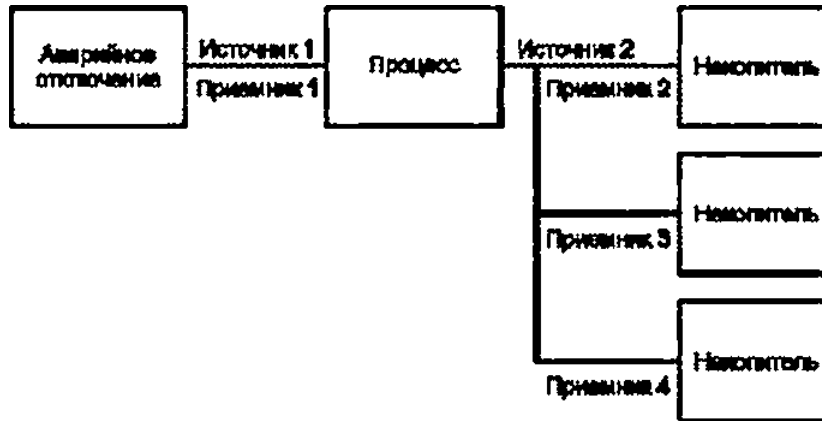
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 Fieldbus Foundation.

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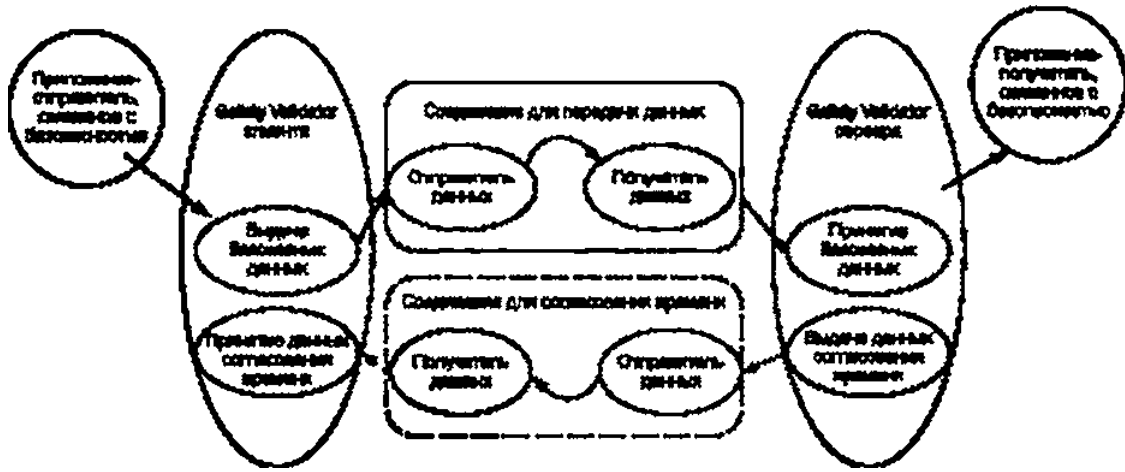
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8— Safety Validator

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Safety Validator.

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PROFIBUS™, PROFINET™
PROFIBUS Nutzerorganisations e.V. (PNO)

PROFIsafe™

PROFIBUS™, PROFINET™, PROFIsafe™

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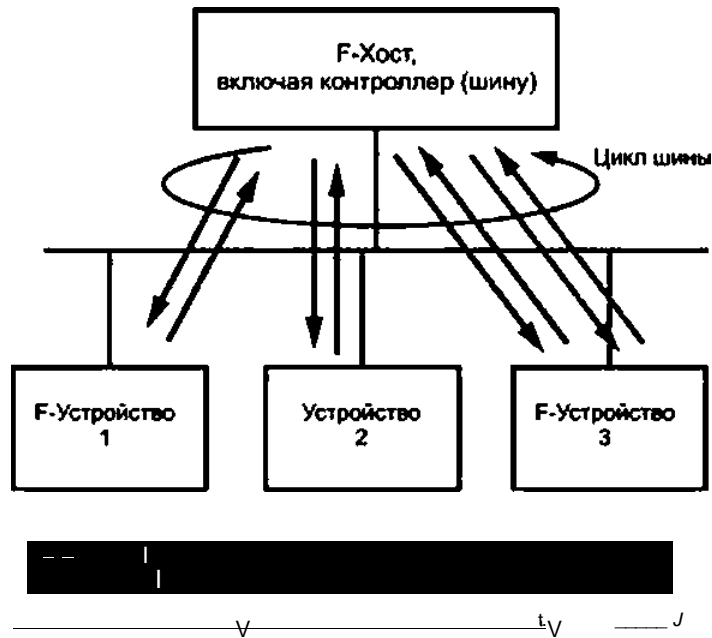
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	CPF 3	61784-1	61784-2.				-
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⁵ PROFIBUS™, PROFINET™ PROFIsafe™
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PROFIBUS™, PROFINET™ PROFIsafe™

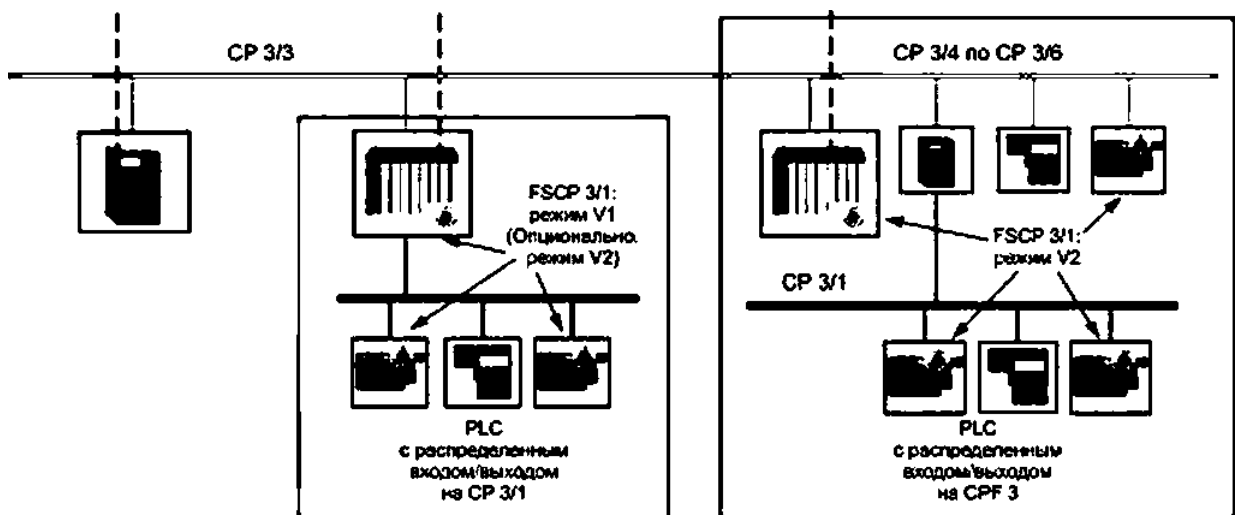
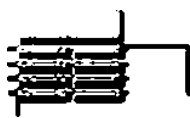
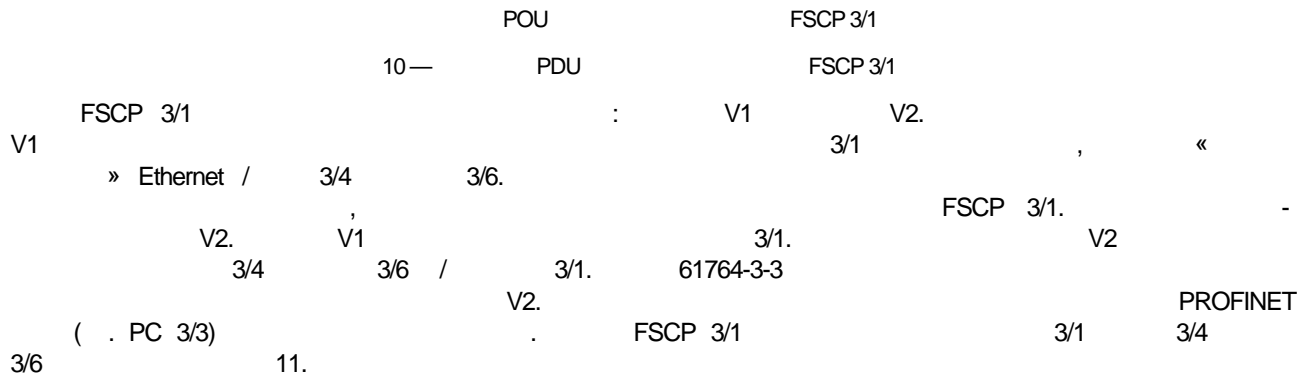
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S – стандартное сообщение, включая PDU безопасности



Данные F-входа/ выхода	Статус/ Управляющий байт	CRC2
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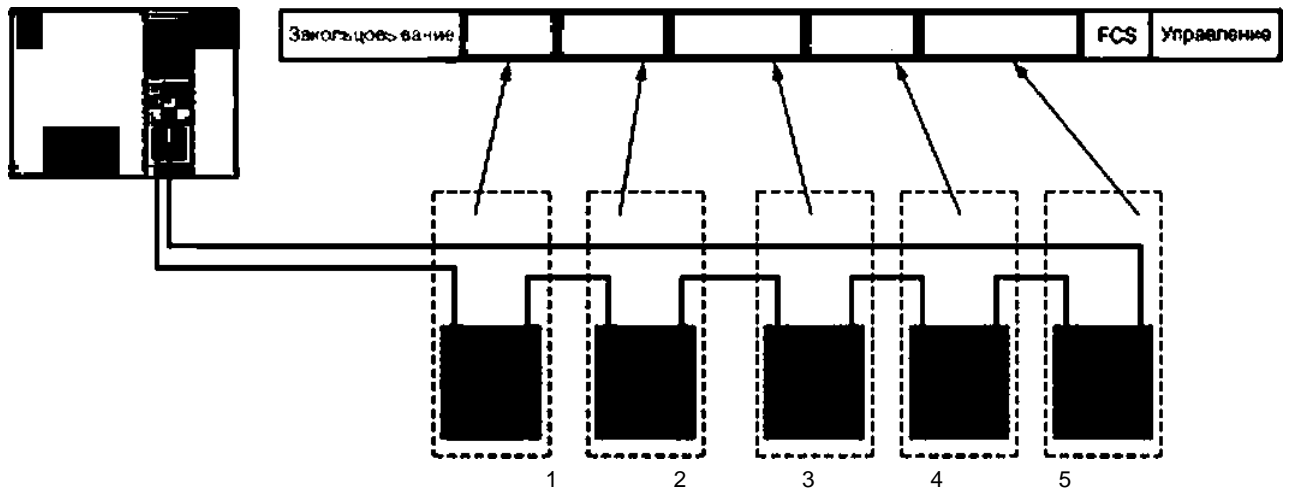
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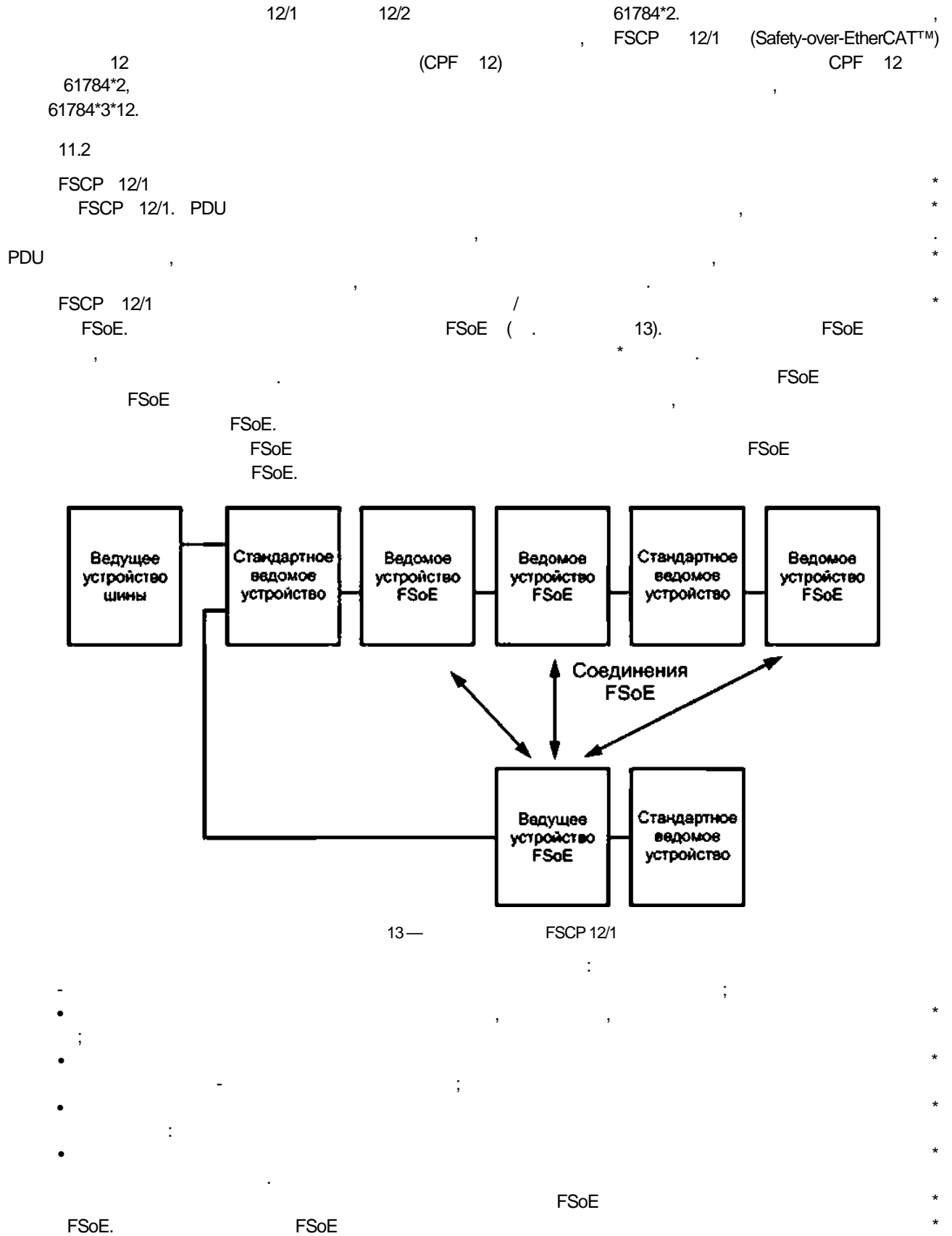
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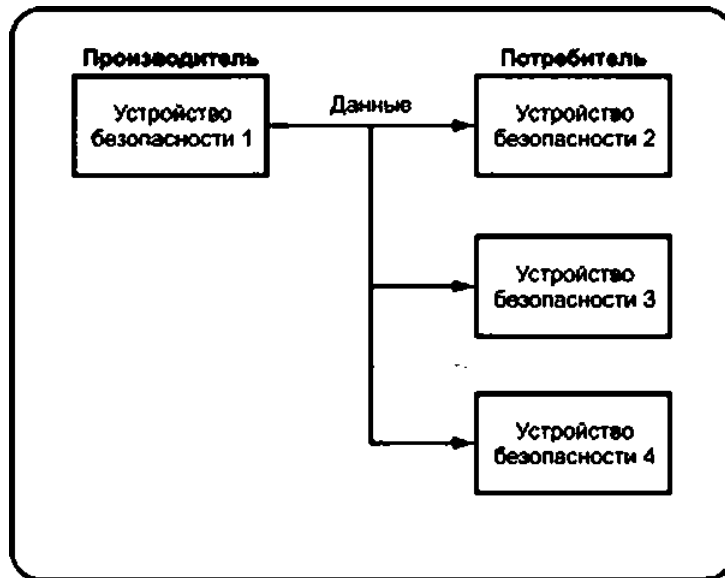
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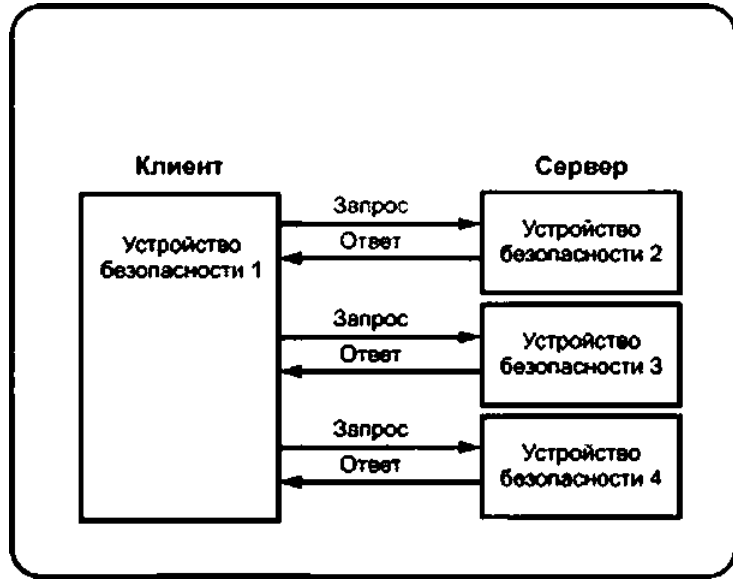
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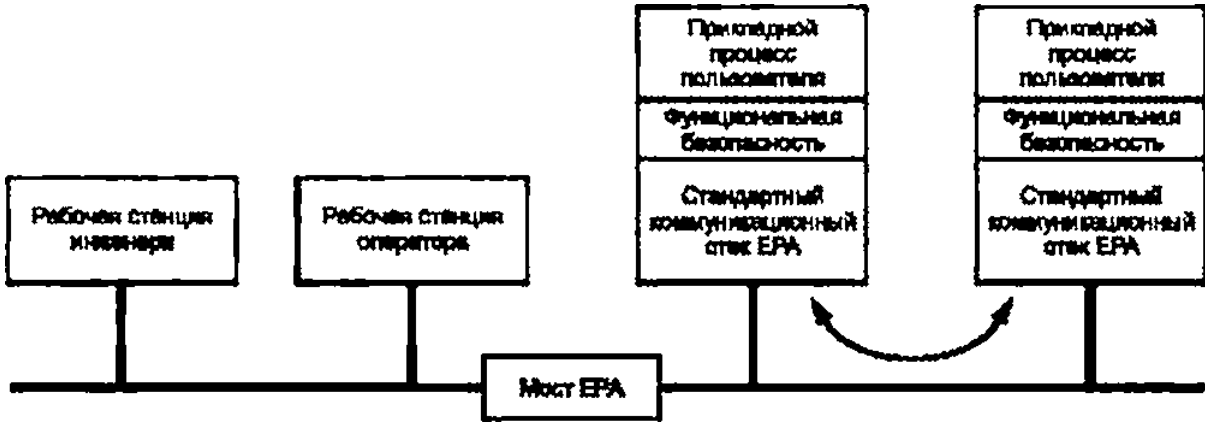
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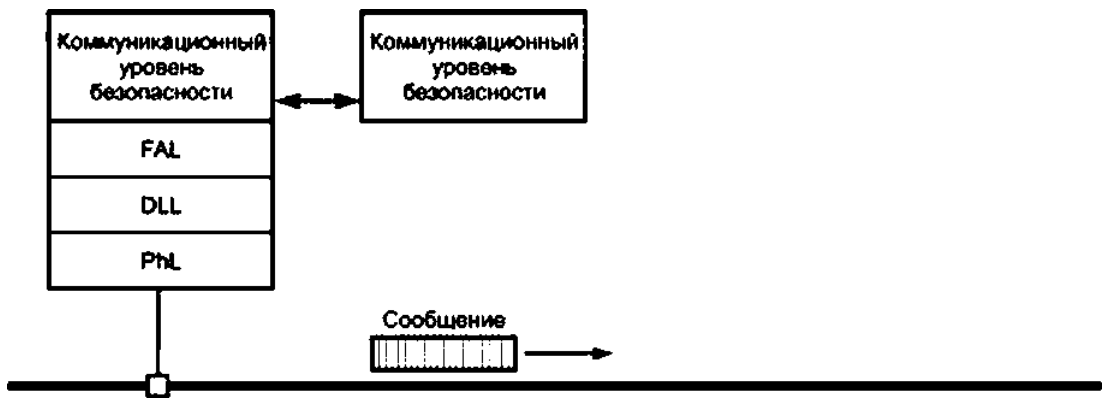
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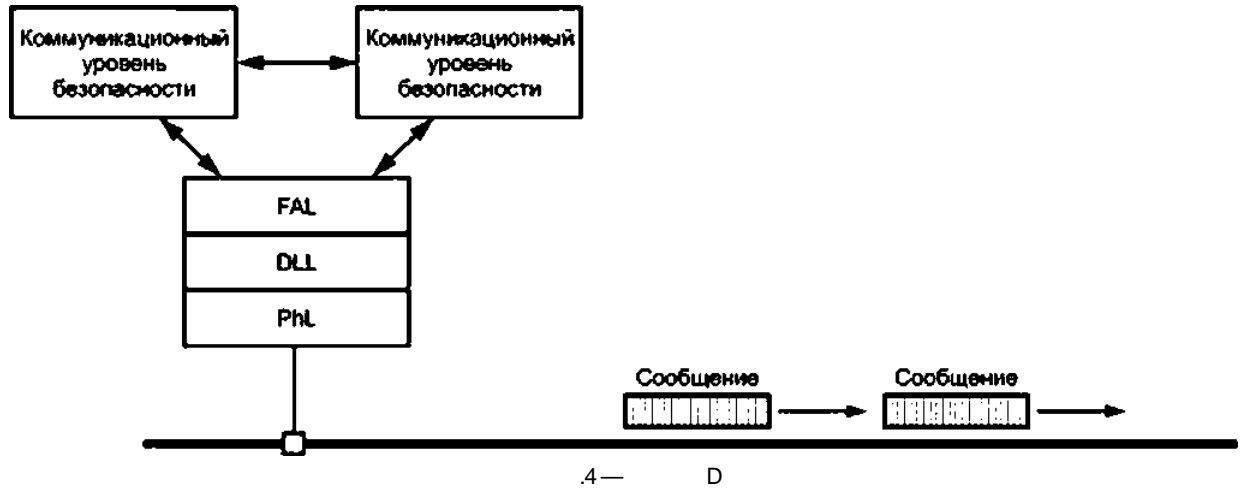
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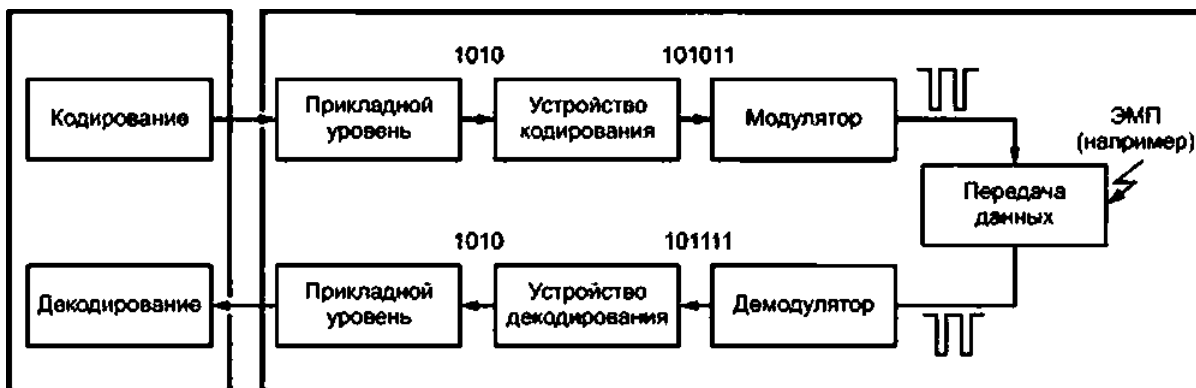
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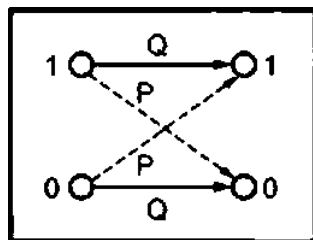
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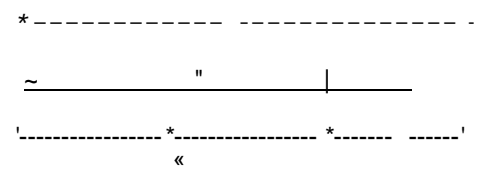
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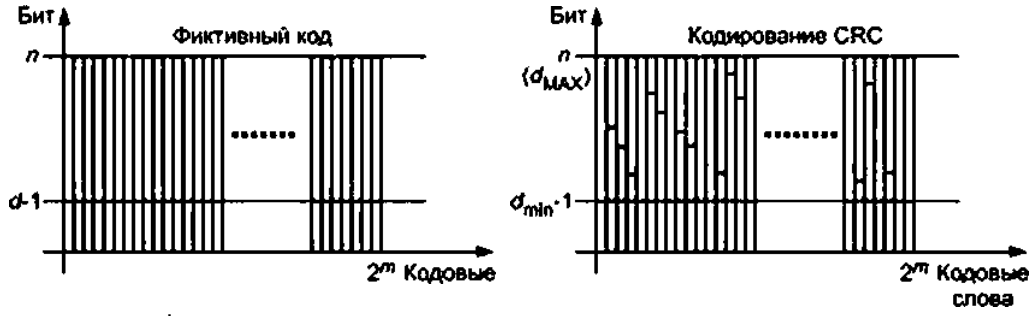
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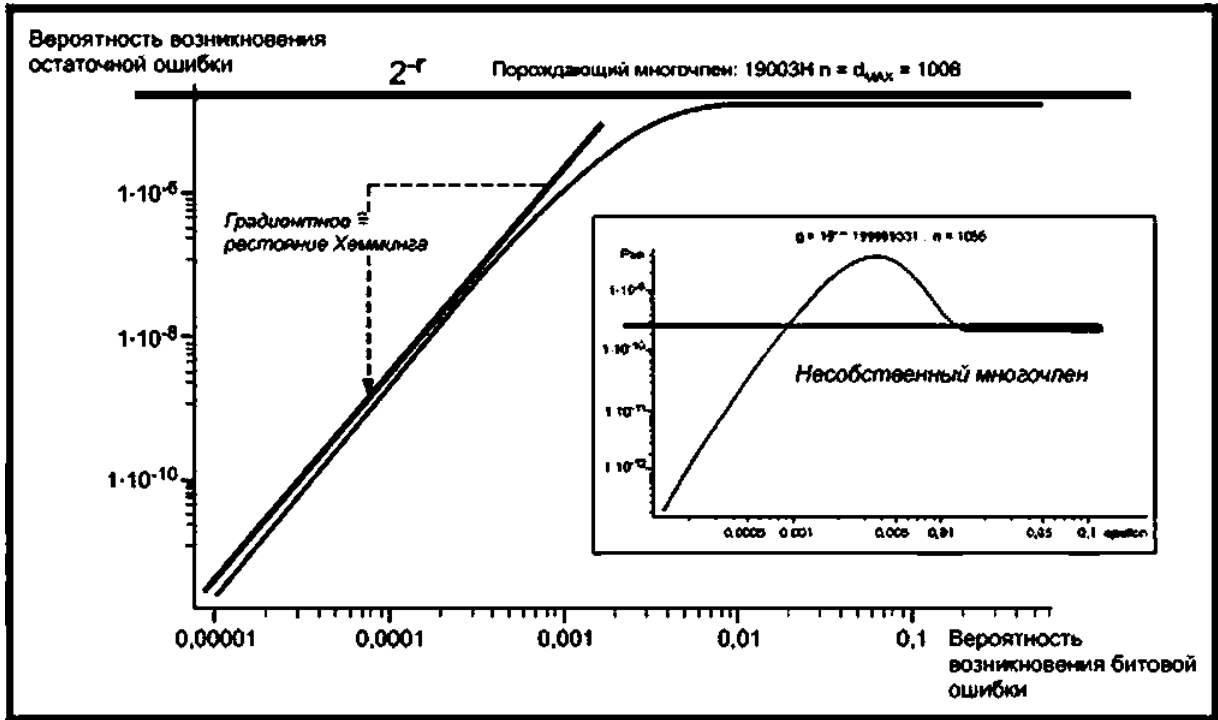


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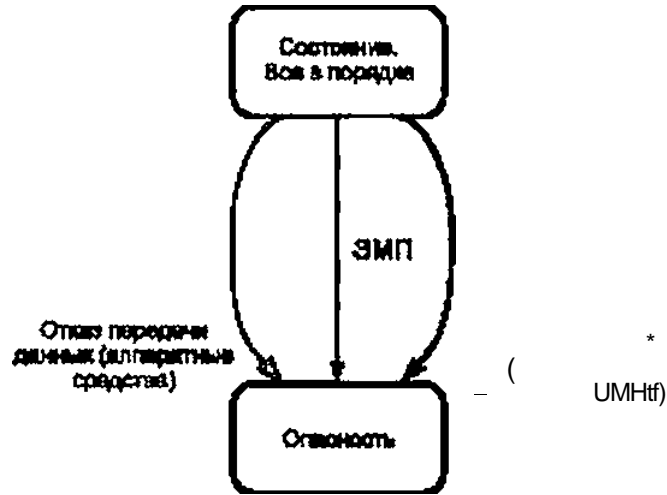
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