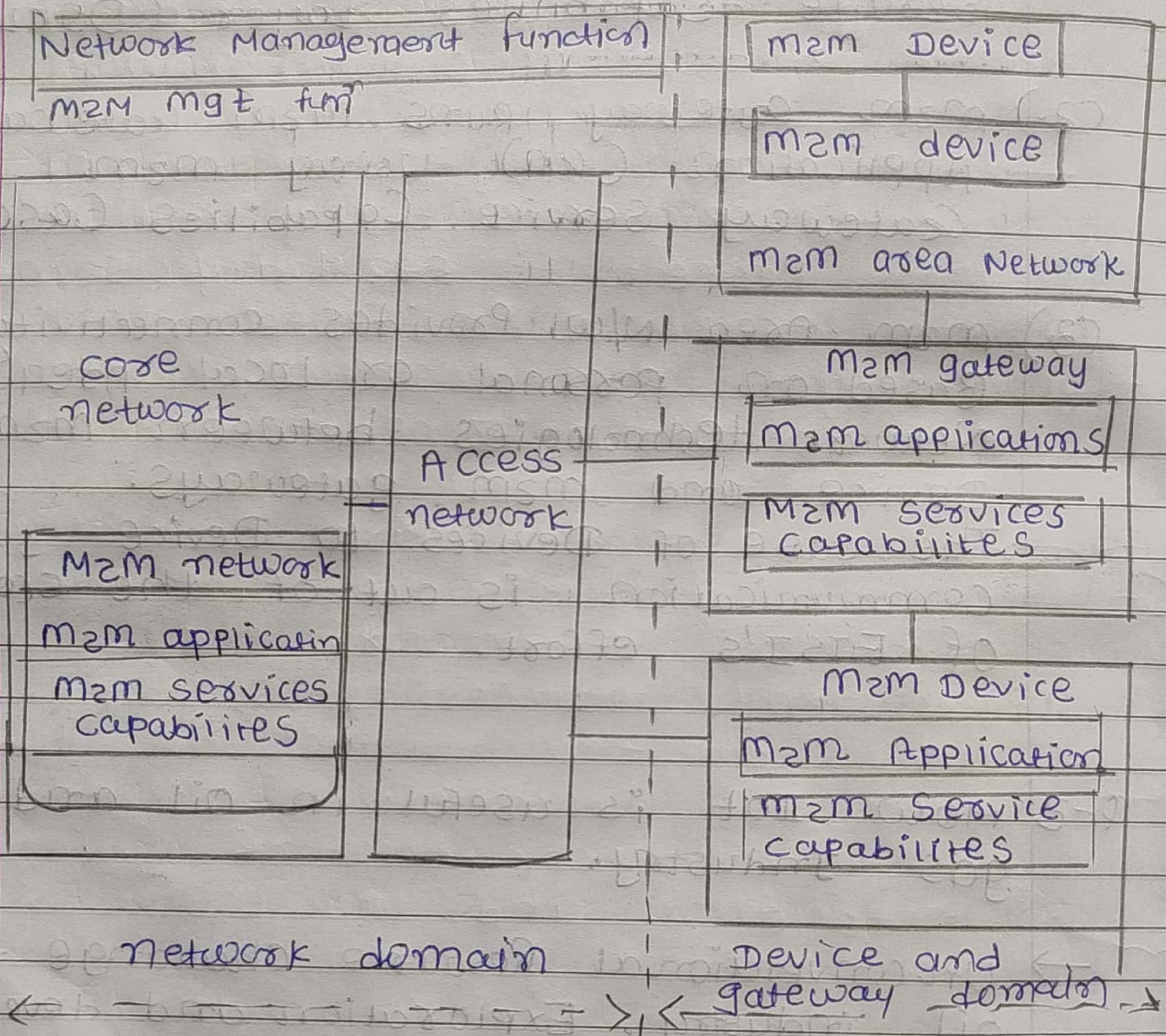


c1) Short note on ETSI m2m high level Architecture.



→ A High level architecture of M2M system consist of a Device and gateway Domain & Network Domain. The Device & gateway Domain comp. the element.

Process industry in general and oil and gas in particular put special requirements on field devices. Devices have to operate under harsh conditions, dirt, often high temperatures and sometimes in explosion-prone environments. It is a challenge to develop a field device that not only is easy to install and maintain, but also has a long enough life.

→ Modern process control systems often have facilities to pass HART commands through I/O modules so that instrument configuration can be modified at the host system level.

→ At a time when well drilling and completion complexity are increasing and field experts are becoming scarcer, automation offers many benefits. Besides capturing domain knowledge,

→ All components of the system under study must be integrated such that information can be reliably

(1) M2M Device Runs M2M Device Application (DA) Using M2M Device Service Capabilities Layer (DSCL)

(2) M2M Gateway Runs M2M Gateway Application (GA) Using M2M Gateway Service Capabilities (GSCL)

(3) M2M Area N/W Provides Connectivity Based on Personal or Local Area Network technologies between M2M Device and M2M Gateways. The case of Device to Device communication is out of the scope of ETSI's effort.

Q-2 How IoT is useful in oil and gas industry.

→ Unconventional Resource Challenge the oil industry. Exploration and development of oil and gas Reservoirs require new sensors, analytics and process systems. Require better connectivity, monitoring and control.

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(3) Explain Trust, Security, Privacy for Iot

→ The security of the Iot is Based on following

(a) Identity - Trust is always tied on an identity. so every device needs unique identity that can't be changed

(b) Positive Intention - The Device and linked service have positive intension

(c) Predictability & Transparency :-
The functional scope of the service provided device is known its full extent.

* Trust to Iot :-

→ Iot touches many different sectors and applications ranging from connected cars to smart house and intelligent infrastructure. This Diversity has spawned an ecosystem that consumers need to trust to keep their data protected.

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gathered. This is especially critical for Real time analytics that directly drive process improvement and production optimization.

→ Some of small AC motors on an oil rig are highly critical with respect to regularity some are critical with respect to safety if for instance placed in explosion proof zone.

→ Larger machines are normally always monitored but for these smaller AC motors then prevailing maintenance strategy was "Run-to-failure" due to their high numbers of up to 1000 units per offshore installation and the cost associated with monitoring them.