SUMMARY FOR THREAT BASED SECURITY ANALYSIS FOR IOT

IOT focuses on the interconnection of things or devices to essentially work as a single system and not as multiple independent devices so that the life of humans become hassle-free.
Sounds something like a typical scene from any science fiction movie, however, in real world scenario there are many loopholes which has definitely slowed down the advancement in this field of technology in recent years.

The two shortcomings which strike my mind at the moment are:

- Inadequate internet bandwidth to seamlessly transmit information between devices almost every second and that too at a high speed.
- Security issues, because if everything is connected, then a lot of personal information can be exposed about any user and hampered systems can also be potentially used to harm the user.

We can clearly see that internet belongs to the infrastructure category and can be used at low speeds where rapid response is not needed, i.e. Slow internet may not be much of a problem if a ceiling fan or an AC is switched on some 30 seconds late but these precious seconds could prove fatal for someone in an ICU ward where an IOT based system is set up to inform the doctor about sudden deteriorating conditions of a patient.

The concerns related to "Security" and "Privacy" raise serious alarms as carefully drafted by Mr. Andrew Martin and Mr. Ahmad W. Atamli in their research paper named "THREAT BASED SECURITY ANALYSIS FOR IOT".
Basically they have taken three IOT based systems into consideration which are: Power Management System, Smart Cars, Smart HealthCare Systems. These systems have the maximum possibility of an early integration into our daily lives. Tesla has already launched many cars and some of them have "100% Autonomous Driving" capabilities and they have been tested on busy roads of LA and California with more than 99.8% accuracy metrics. The company still claims to continue its research and lower down the accuracy loss from 0.2% to as low it can get so that any sort of threat to human life is neutralized.

Coming back to the research work done in this Paper, they have clearly laid out the various security and privacy threats that lure over the users who use IOT based systems because all devices that are part of the system don't have the storage capacities or the computation power to fend off the attacker. Equipping with lots of computation resources to each device will not be cost or energy efficient in any respect and ultimately will fail as an idea.
However with reference to this research paper, we can clearly see that the severity of the threats increase specifically in systems which are designed for the Life-Death situations such as the HealthCare systems where a wrong dosage of any chemical or a delay in informing the doctor could prove fatal for the person in consideration. In such systems, security has to top notch even at the cost of increased energy resources as 'Life' tops the priority table by all means.

To conclude, I must say that effective security measures must be devised to increase the trust level of people in IOT systems so that they can be fearlessly used and be incorporated in daily life.