

## Needs

1. An automatic assembly pipeline that can reprocessing all medical devices automatically, in a high sanitary standard, efficient and lab-saving way.
2. An automatic distribution system that distribute different medical items to their right places in a proper manner.
3. A tracking system for all medical instruments that can avoid the lose of medical items.
4. A website or a smartphone APP that can let patients get information of all doctors and their available period therefore can make appointments with doctors.
5. A recording system (hardware and software) that records all the texts, information, voice, etc. in exam room, helps doctor diagnosing, therefore simplifies the whole process of information storage (the paper of diagnostic must be scanned and save in databases.)
6. A secure data transmission and storage system that can transfer and store digital diagnostic data (image, video, audio, all data related to the patient) in a secure way since these data is high private and important therefore need protection method in case of data leakage.
7. An anti-counterfeit watermark printed in medical certificates of the hospital that let the certificates have some authoritative property and hard to counterfeit.
8. A system that can help communicate the orders in operating rooms. (sometimes the voice between doctors and nurses is not clear).
9. An automatic check system that can check or help to check the numbers of different medical insurgents in OR, thus release the burden of nurses.
10. A lightweight and convenient outfit for entering X-ray room, prevent the radiation of X-ray.
11. When medical images have been unauthorized tampered or modified, a technique that can detect tamper and recover the images (Fragile watermarking for medical images).
12. A copyright management system for medical images since medical images are highly private and sensitive.

13. An cardiovascular surgery education system based on virtual reality and augmented reality.
14. An online medical image share platform which used for education, academic communication and diagnosis purposes.
15. An online medical education platform to share medical knowledge, clinical cases and some other information in medical field (maybe just like Coursera in medical field.)
16. An professional social platform for doctors, medical students and hospital. (maybe just like LinkedIn in medical field.)
17. A remote medical imaging diagnosis platform that connect doctors and patients, enable patients get diagnosis information without go to hospital.
18. An intelligent 3D reconstruction & printing system for cardiac MRI, CT, ultrasound, etc. images that helps doctors have a better understanding of the heart.
19. An automatic analysis system (obtain knowledge not data from images) for cardiac medical images which can help doctors diagnosing.
20. Automatic segmentation of the left ventricle in cardiac medical images.