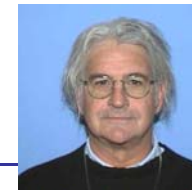




ILC Positron Systems RDR Costs



J. C. Sheppard
Daresbury, UK
October 8, 2007



ILC Positron Systems RDR Costs

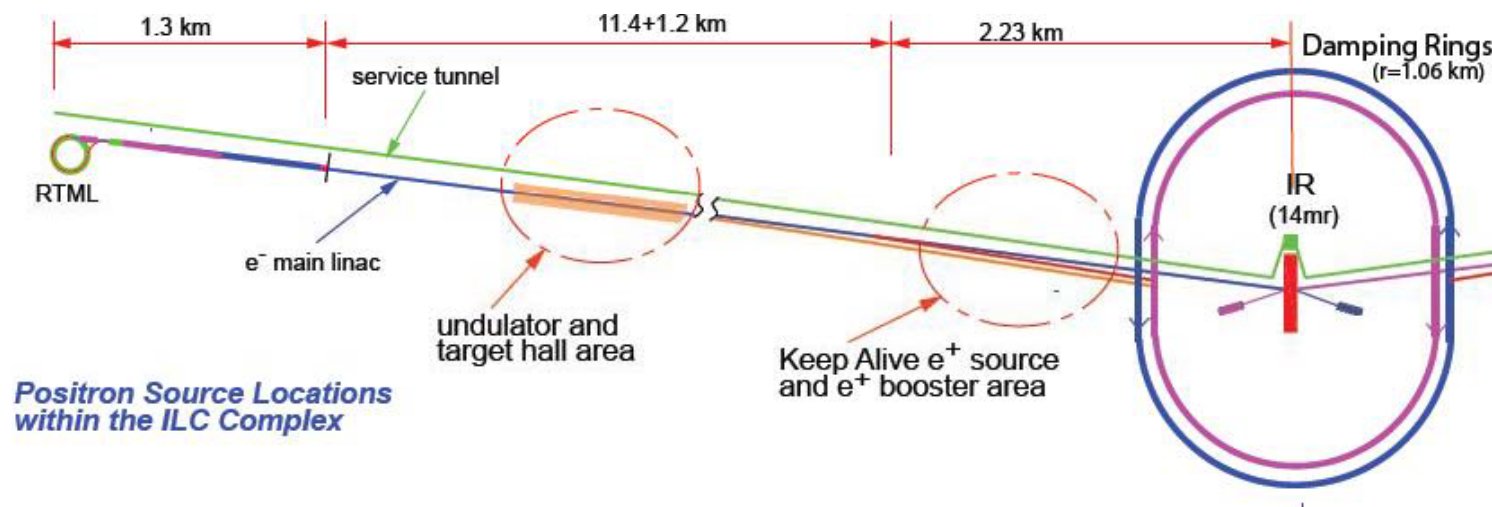


FIGURE 2.3-1. Layout of the Positron Source in the ILC

J. C. Sheppard
Daresbury, UK
October 8, 2007



ILC Positron Systems RDR Costs



P. Garbincius Estimate versus J. Sheppard Estimate Methodology, i

JCS collected costing numbers from various global and technical systems groups. These numbers were based on specification sheets which detail operational requirements as well as inventory (count). Management (jcs) and Installation (fa) added on top as a “tax”

Numbers in turn where sent to P. Garbincius. Main interaction with Garbincius (and with GS and TS) has been in regards to the proper inventory. Minimal cost review for piece parts due to lack of resources (time and personnel and TS and GS availability)



ILC Positron Systems RDR Costs



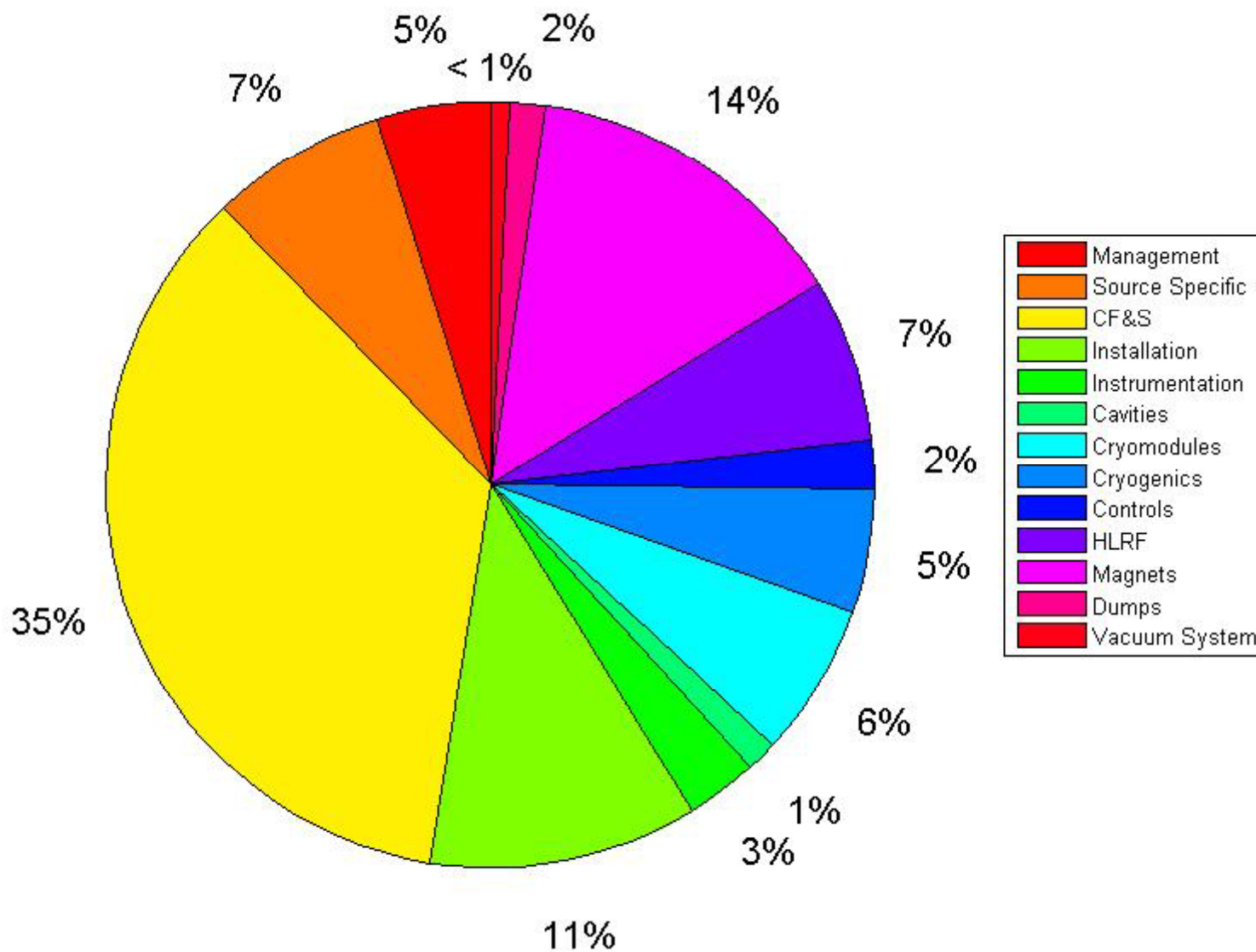
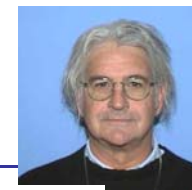
P. Garbincius Estimate versus J. Sheppard Estimate
Methodology, ii

Some rebundling of costs by P. Garbincius

Main difference (21%) is the stripping out of installation and management as labor by phg from the jcs tables (19.6%) and from the different CFS cost (1.2%). There is a 0.7% deviation in the jcs “adjusted” value from the pgh value



ILC Positron Systems RDR Costs

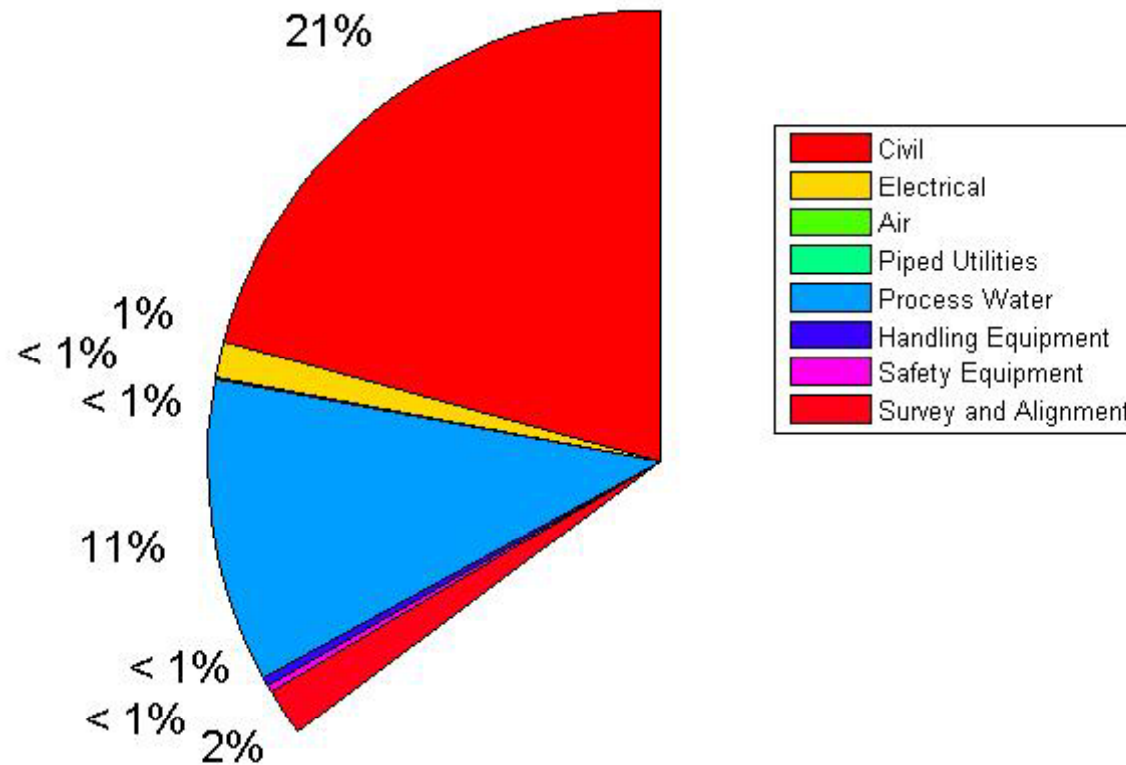




ILC Positron Systems RDR Costs

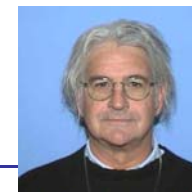


Civil Costs: 35% of Total

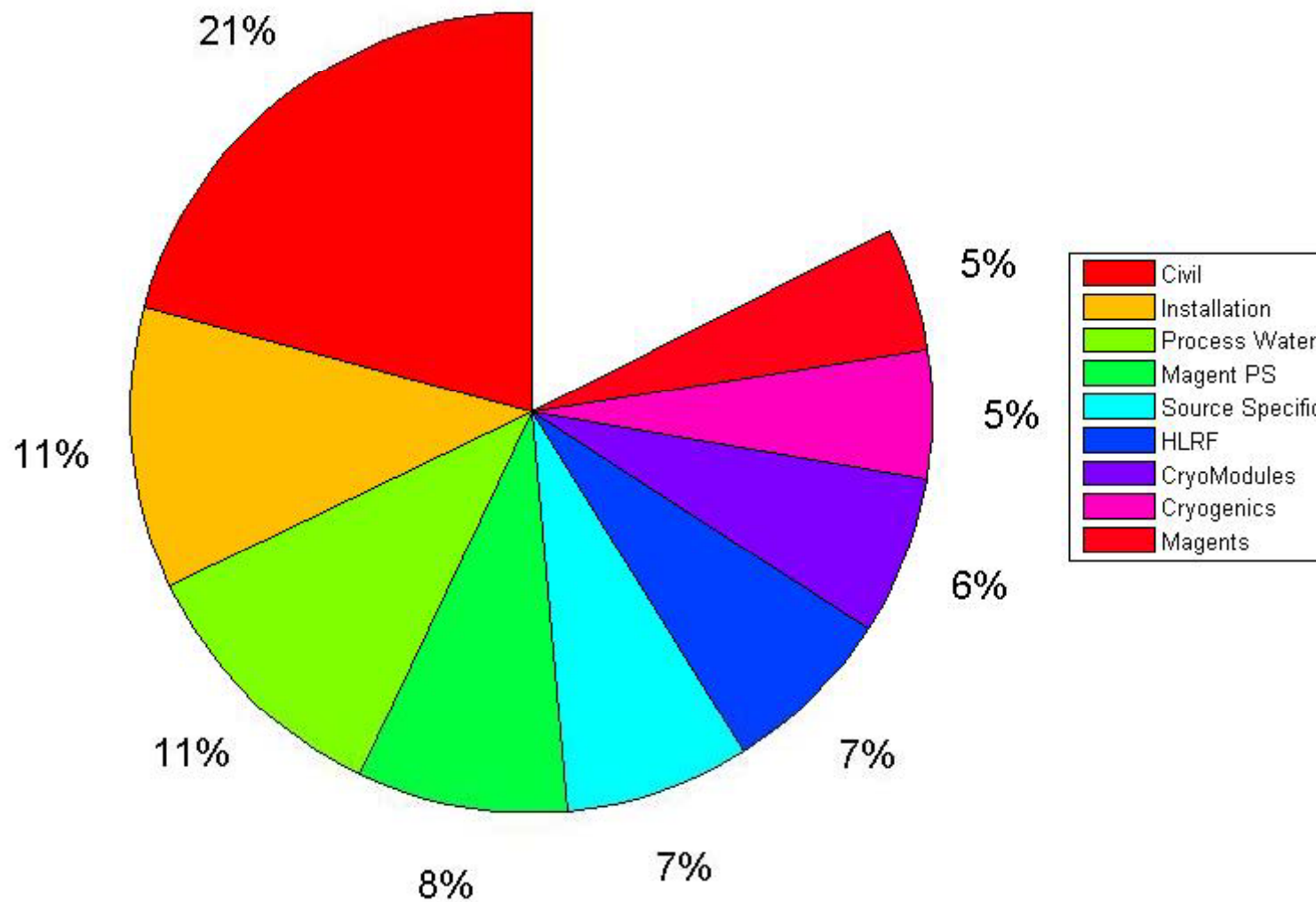




ILC Positron Systems RDR Costs



Cost Drivers





ILC Positron Systems RDR Costs



Cost Drivers

- Civil: Und Insert: yield and capture efficiency
undulator strength, K^2
electron emittance dilution
- KAS Source: ~14% of total system cost
~21% of total component cost
is this needed? why?
eliminate or defer
- Process Water: what is this and why?
- Magnet PS: x2 cost of magnets
excessive cable plant



ILC Positron Systems RDR Costs



Cost Concerns

Remote handling is not sufficiently accounted in RDR (\$\$\$)

Installation is possibly too low, certainly not well understood in terms of full picture (acquisition, inspection, warehousing, checkout,.....) (\$\$)

Civil allocations not well understood (caverns, shafts, timing insert,....) likely more of an accounting issue

KAS may not be needed but ILC may want something for commissioning, e- on e-, and gamma-gamma

Question of cryo costs from e- KOM, not sure if this is important or not